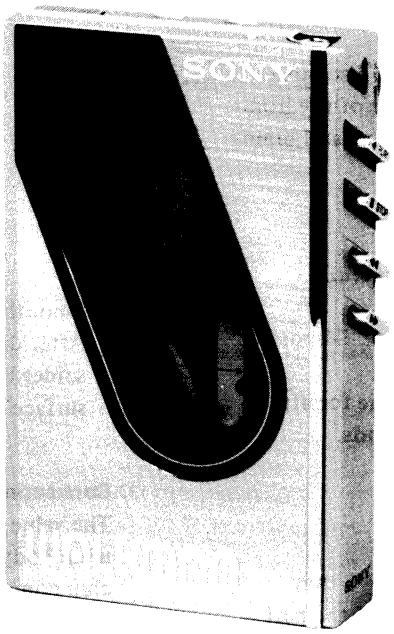
WM-10II/30

SERVICE MANUAL

Refer to MDR-W30L(B) Service Manual issued previously for information of headphones supplied with this set.



WM-10II:

US Model

Canadian Model

WM-30:

AEP Model

UK Model

E Model

H45

SPECIFICATIONS

Tape track: 4-track 2-channel stereo
Fast winding time: Approx. 2 min. 30 sec. with Sony cassette C-60
Frequency response (DOLBY NR OFF)
40–15,000 Hz (with the TAPE selector set to $\frac{CrO_2}{METAL}$)
40–15,000 Hz (with the TAPE selector set to NORM)
Power output: 5 mW + 5 mW (max.)
5 mW + 5 mW (at 10% harmonic distortion) at dc operation
Power requirements: 1.5 V dc
Size AA battery (IEC designation R6)
External batteries (used in the optional case EBP-10):
size AA (IEC designation R6) × 2

WM-10II only

DC IN 1.5 V jack accepts: Sony AC-D1 ac power adaptor (optional) for use on 120 V ac or Sony DCC-70 car battery cord (optional) for use with 12 V car battery.

WM-30 only

DC IN 1.5V jack accepts:
Sony AC-D1 ac power adaptor (optional)
available in the continental European countries for use on 220 V ac, 50 Hz
available in the United Kingdom for use on 240 V ac, 50 Hz,
available in other countries for use on 110, 120, 220, 240 V ac, 50/60 Hz
adjustable by Sony personnel.
Sony DCC-70 car battery cord (optional) for use with 12 V car battery

Battery life (continuous playback hours):
Approx. 2.5 hours with Sony SUM-3 (NS) New Super battery
Approx. 5 hours with supplied Sony Eveready AM3 alkaline battery
For maximum performance we recommend the use of alkaline battery.
Dimensions:
With cassette inside
Approx. 86 × 111.4 × 22.4 mm (w/h/d) ($3\frac{1}{2} \times 4\frac{1}{2} \times \frac{29}{32}$ inches) incl. projecting parts and controls
Without cassette inside
Approx. 70 × 110.8 × 21.3 mm (w/h/d) ($2\frac{7}{8} \times 4\frac{3}{8} \times \frac{27}{32}$ inches) not incl. projecting parts and controls
Weight: Approx. 190 g (6.8 oz) incl. battery, not incl. other accessories

MICROFILM

STEREO CASSETTE PLAYER

SONY®

TC

SERVICING NOTE

Servi circuit has been changed for the sets with serial number 77,001 and later.

Replacing chip components

All chip components should be connected and disconnected, using a tapered soldering iron [temperature of the iron tip: less than 280°C (536°F)], a pair of tweezers and braided wire.

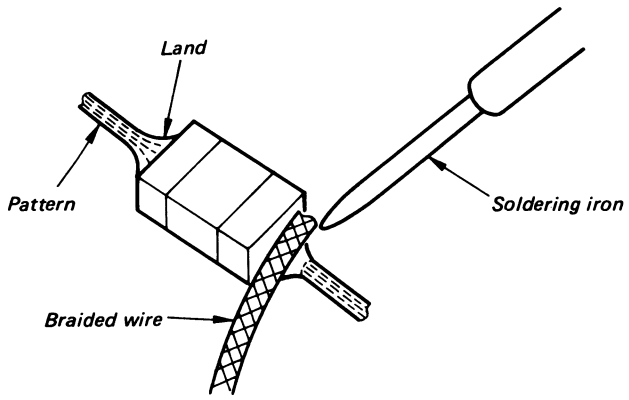
Precautions for replacement

1. **Do not disconnect the chip component forcefully. Otherwise, the pattern may peel off.**
2. **Never re-use a disconnected chip component. Dispose of all old chip components.**
3. **To protect the chip component, heating time for attaching the component should be within 3 seconds.**

○ Removing chip components

(1) Removing solder at electrode

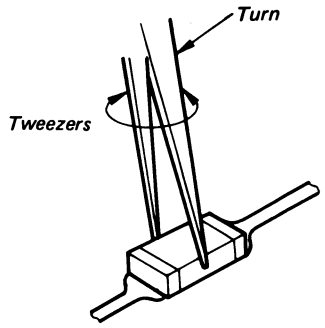
Remove the solder at the electrode, using a thin braided wire. Do not remove the solder of the part (chip component) attached adjacent to the electrode.



(2) Disconnecting chip components

Turn the tweezers with the soldering iron alternately applied to both electrodes, and the chip component will be disconnected. Take careful precautions while disconnecting, because if the chip component is forcefully removed the land may peel off.

Never re-use a disconnected chip component.



(3) Smoothing the soldered surface

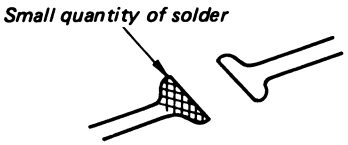
After disconnecting the chip component, remove the solder by using a braided wire to smooth the land surface.

○ Connecting chip components

The value of chip components is not displayed on the main body. Take due precautions to avoid mixing new chip components with other ones.

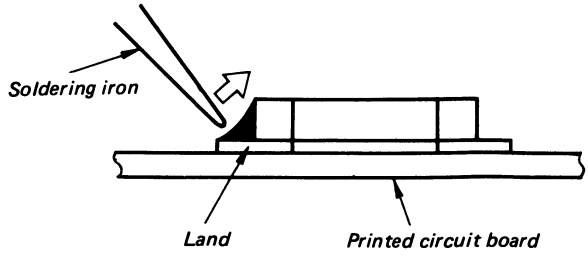
(1) Applying solder to land on one side

Apply a thin layer of solder to the land on one side where the chip component is to be connected. Too much solder may cause bridging.



(2) Speedy soldering

Hold the chip component at the desired position, using tweezers, and apply the soldering iron in the arrow-marked direction. To protect the chip component, heating time should be within 3 seconds.



(3) Speedy soldering of electrode on the other side

Solder the electrode on the other side in the same way as in (2) above.

SECTION 1
OUTLINE

1-1. MODEL IDENTIFICATION

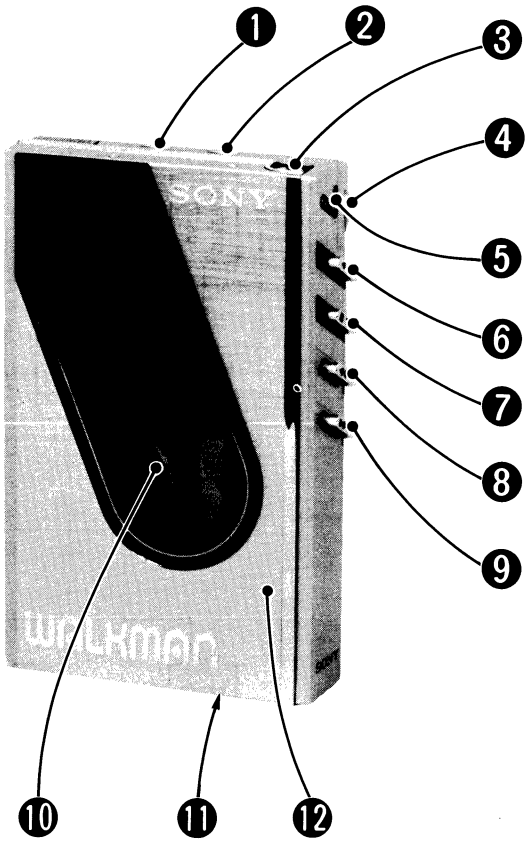
US, Canadian model

SONY® WM-10II
STEREO CASSETTE PLAYER
BATT SUPPLY:1.5Vx1 IEC R6
JIS SUM-3 SIZE AA MADE IN JAPAN
SONY CORP.

AEP, UK, E model

SONY® WM-30
STEREO CASSETTE PLAYER
BATT SUPPLY:1.5Vx1 IEC R6
JIS SUM-3 SIZE AA MADE IN JAPAN
SONY CORP.

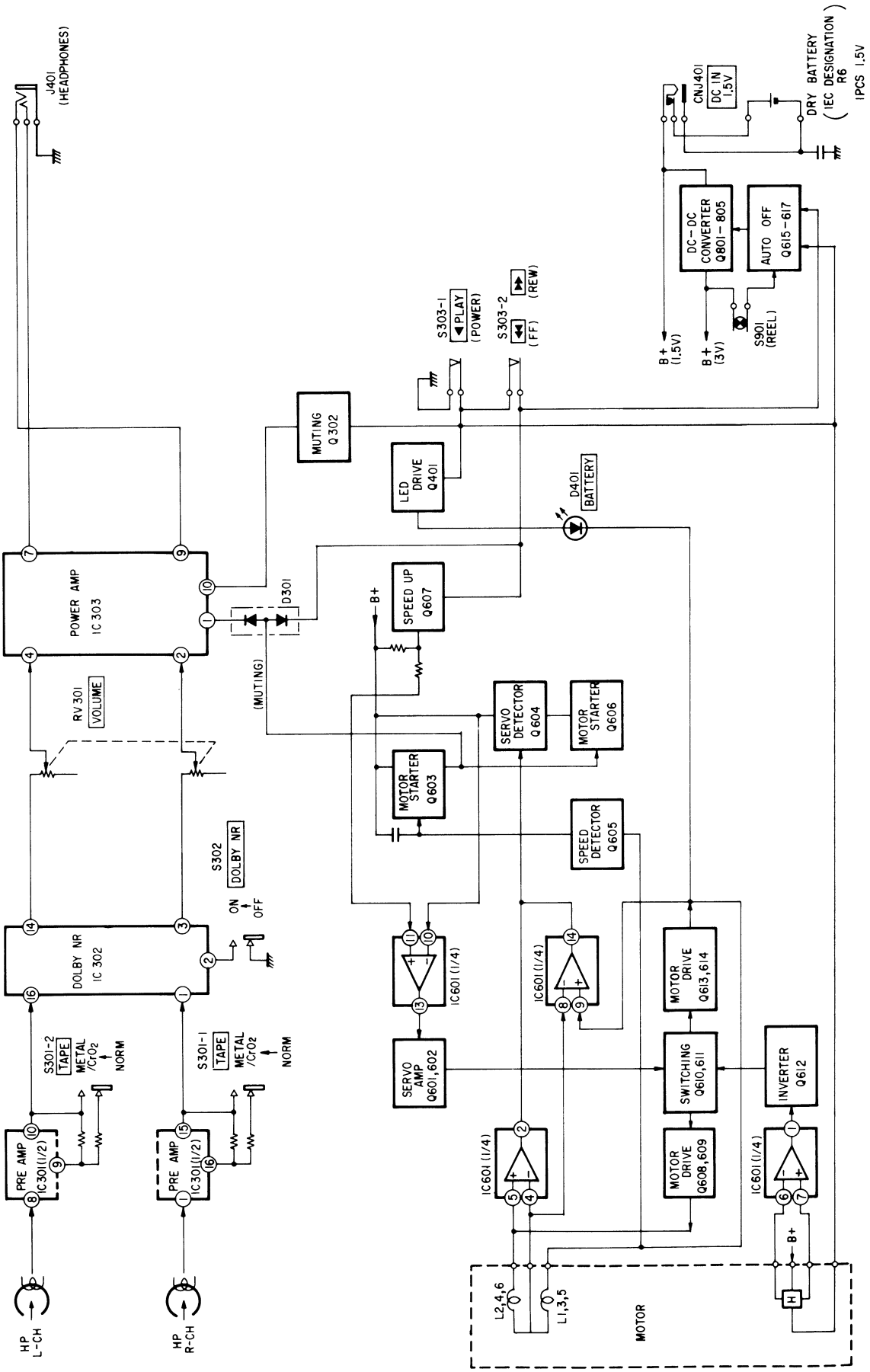
1-2. PARTS IDENTIFICATION



❶ TAPE selector ❷ DOLBY NR switch ❸ Headphones jack
❹ VOL (volume) control ❺ BATTERY indicator ❻ ◀PLAY button
❼ ■STOP button ❽ ◀◀button ❾ ▶▶button ❿ Cassette compartment
⓫ DC IN 1.5V (external power input) jack ⓬ Battery compartment

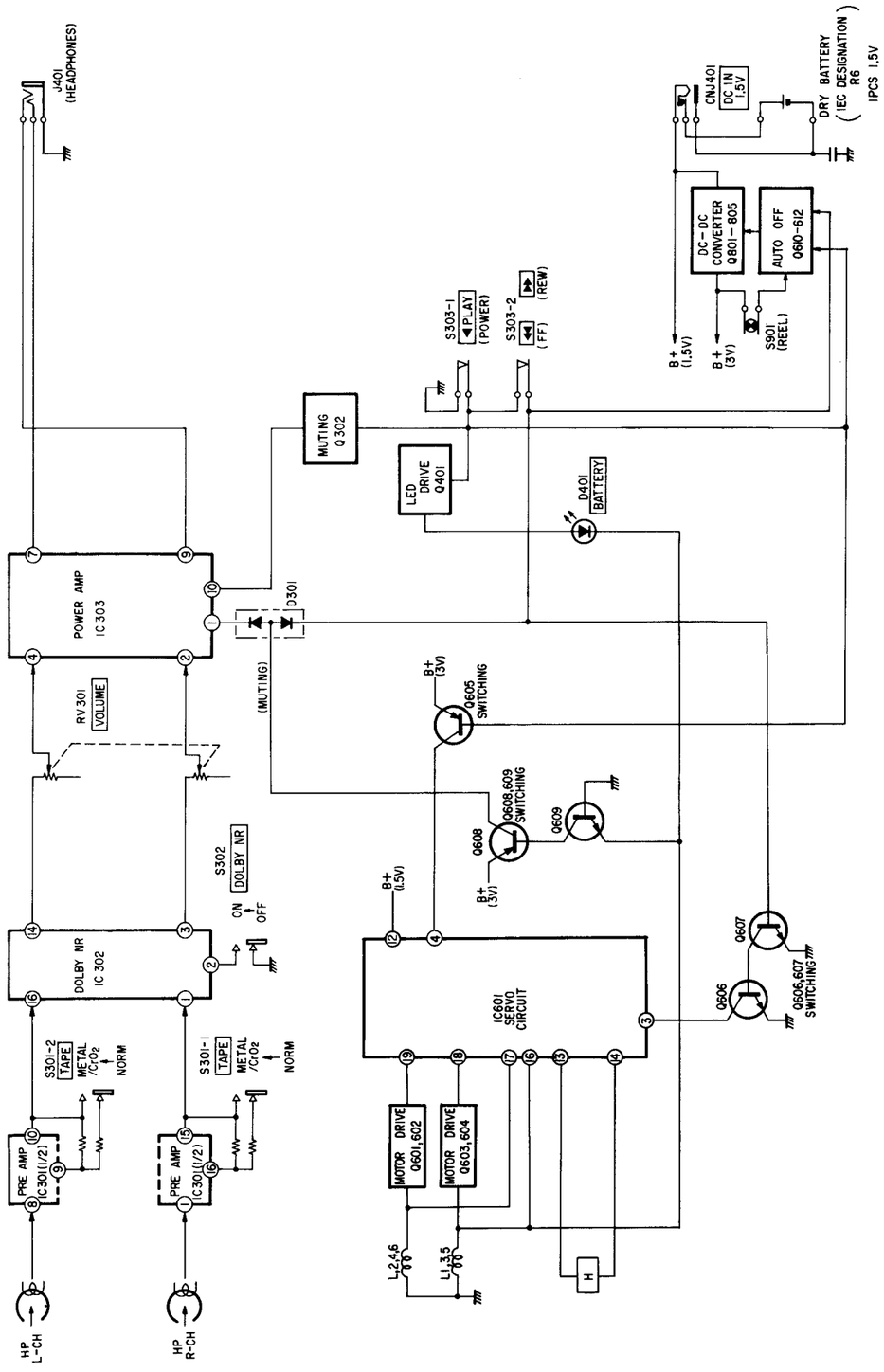
1-3. BLOCK DIAGRAM

Up to Serial No. 77,000



1-4. BLOCK DIAGRAM

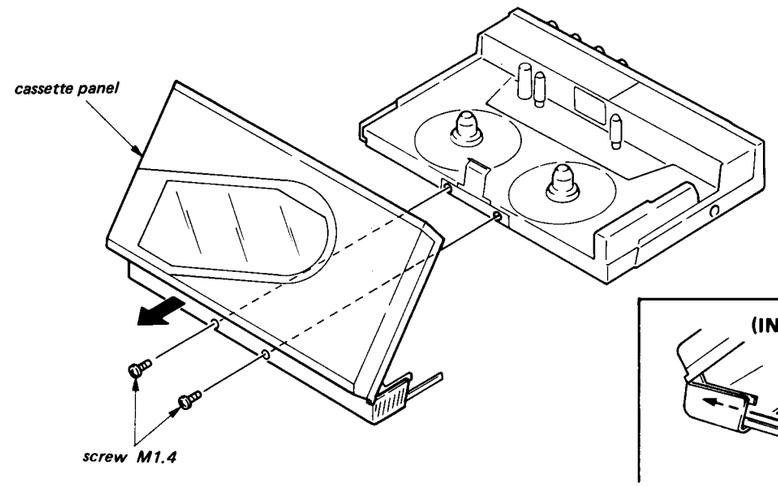
Serial No. 77,001 and later



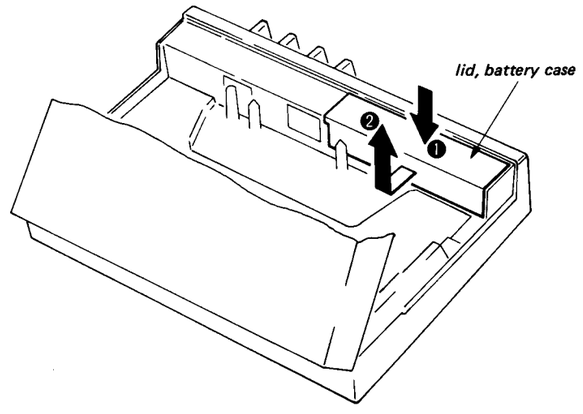
SECTION 2
DISASSEMBLY

Note: Follow the disaasembly procedure in the numerical order given.

CASSETTE PANEL

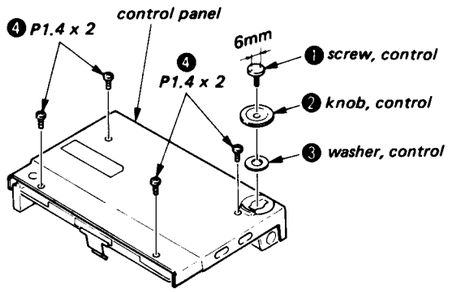


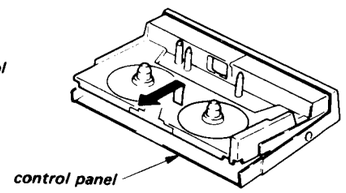
LID, BATTERY CASE



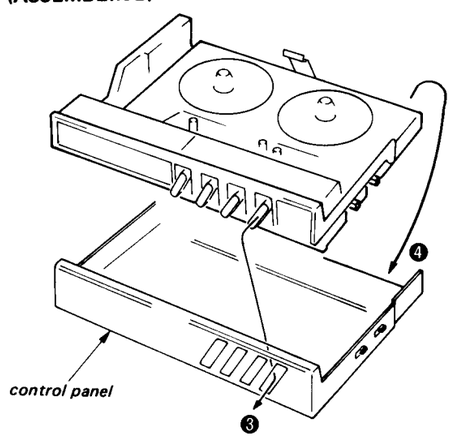
to P. 13 MOTOR BLOCK

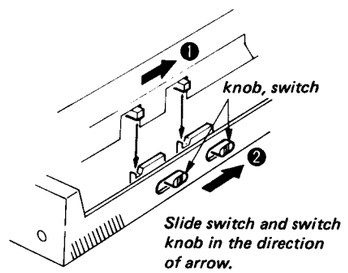
CONTROL PANEL





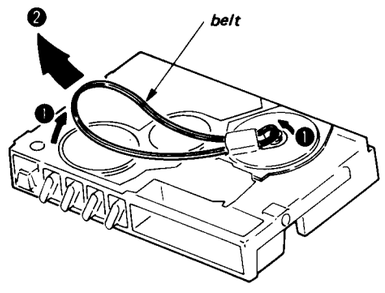
(ASSEMBLING)



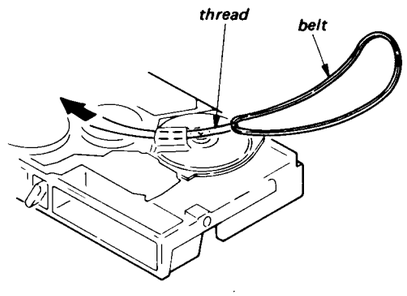


BELT

(REMOVING)

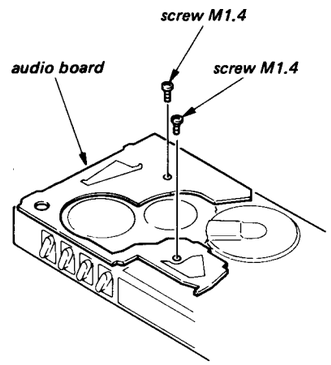


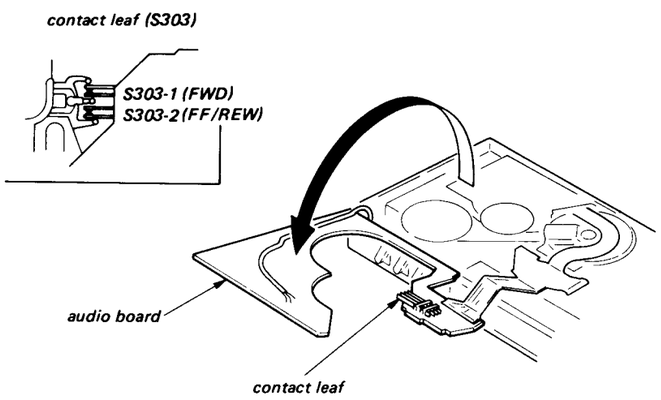
(INSTALLING)



AUDIO BOARD

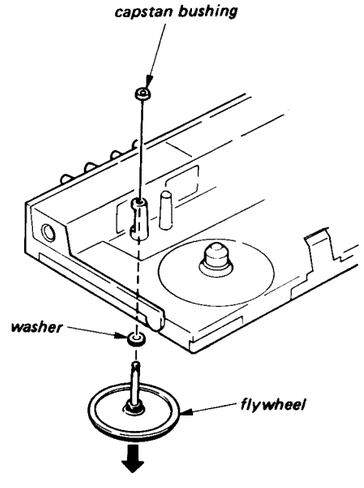
• *When removing and installing the audio board, be careful not to bend the contact leaf.*



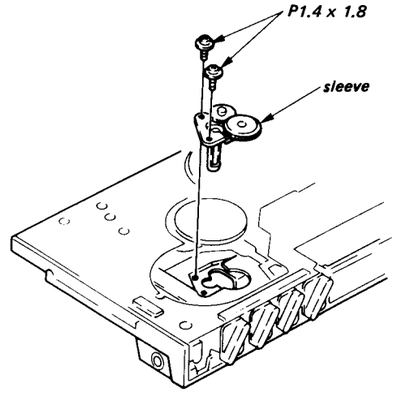


FLYWHEEL

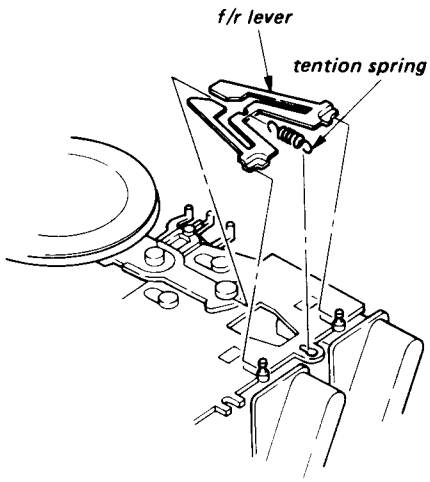
Don't use the old capstan bushing again after removing it.



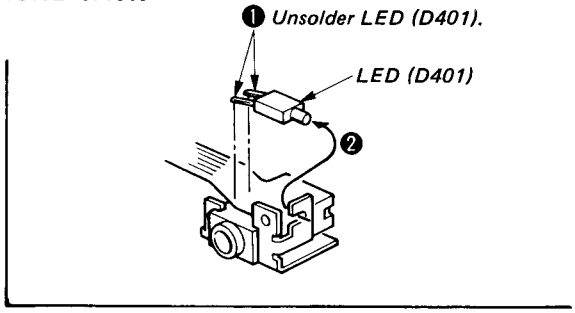
SLEEVE

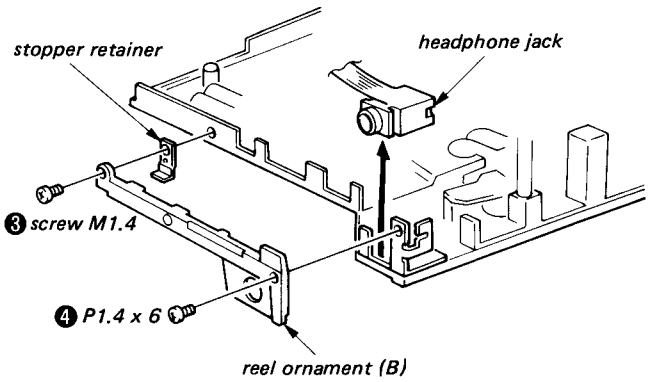


F/R LEVER

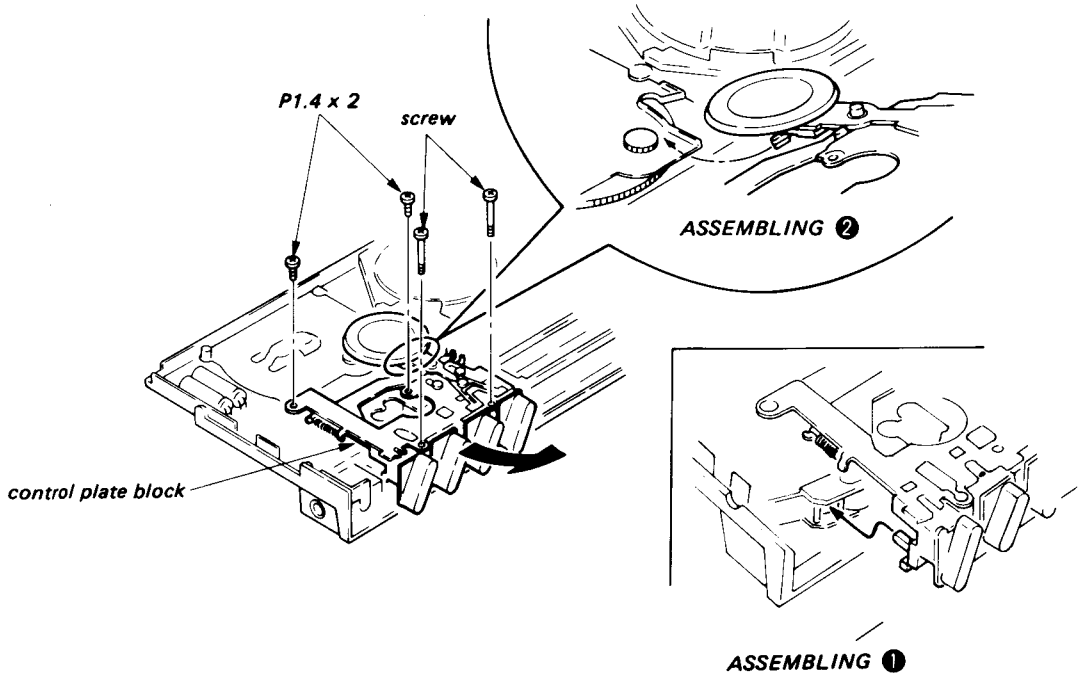


HEADPHONE JACK

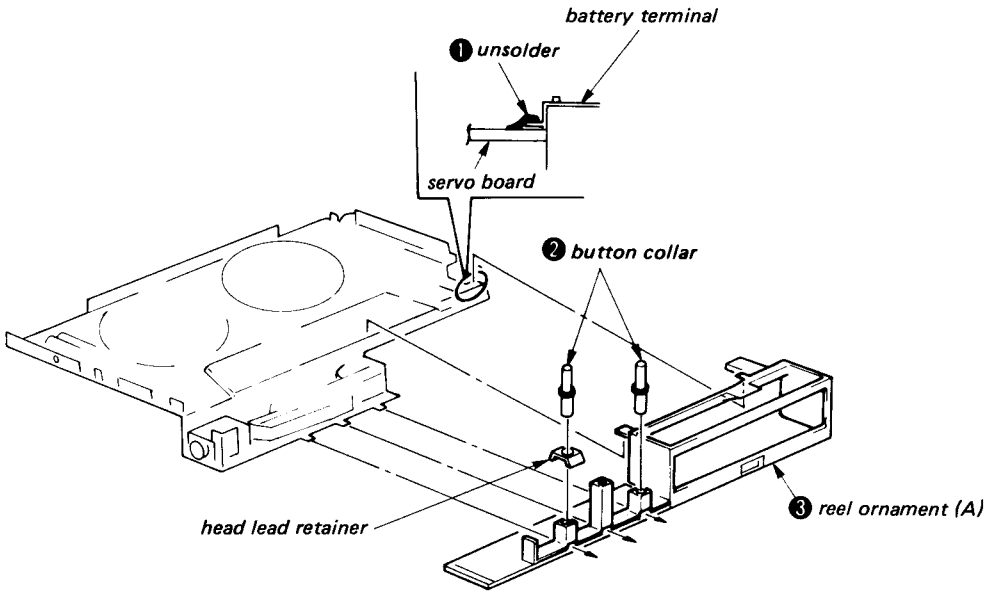




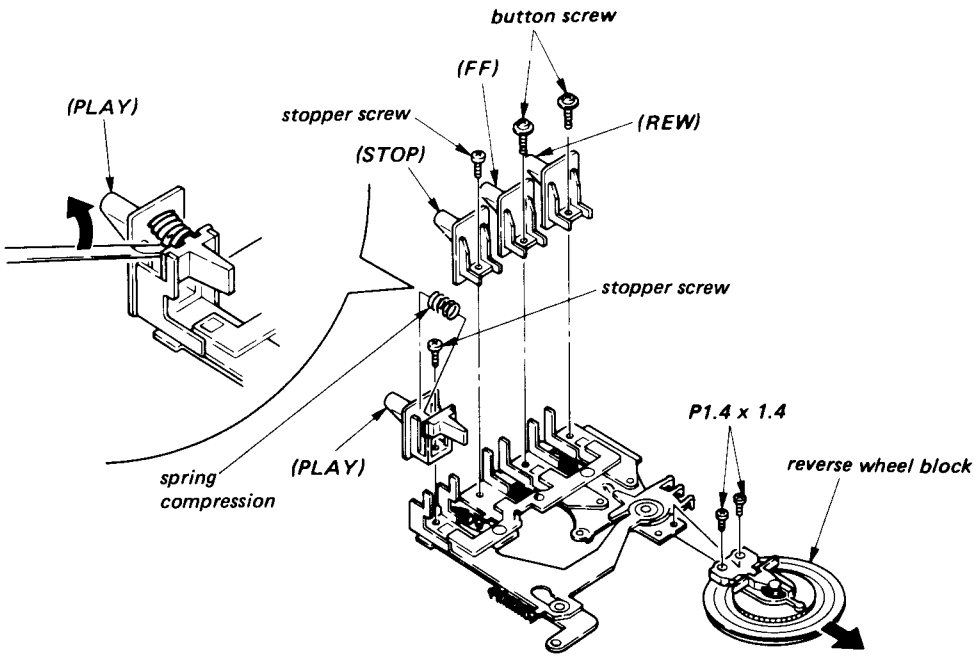
CONTROL PLATE BLOCK



REEL ORNAMENT (A)

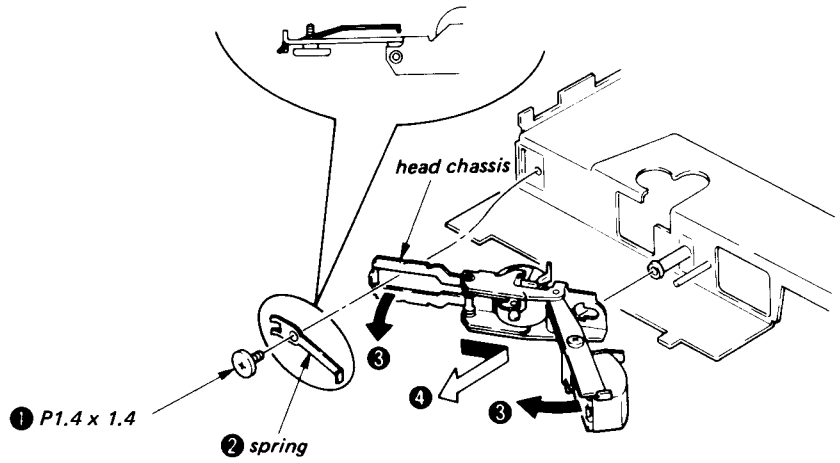


BUTTON (PLAY, STOP, FF, REW), REVERSE WHEEL BLOCK

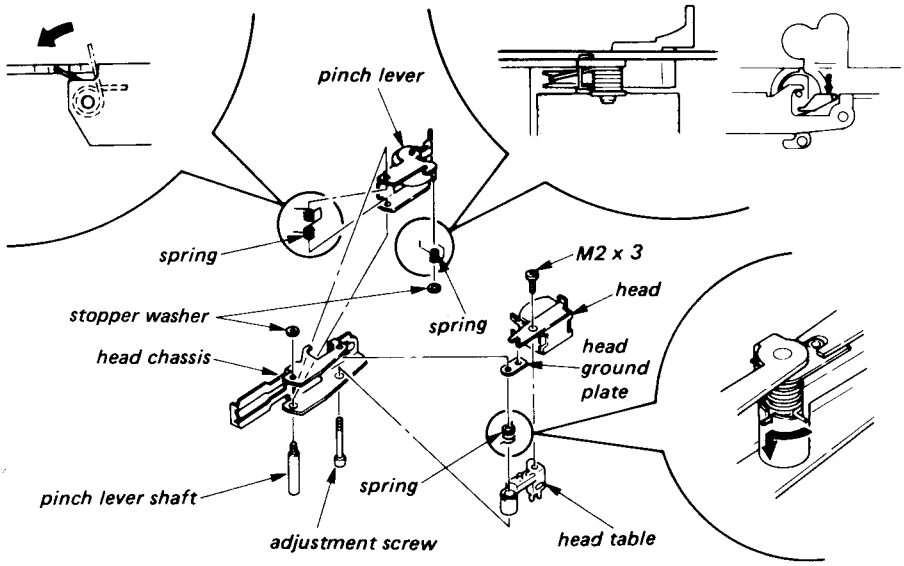


HEAD CHASSIS

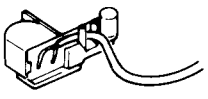
Don't use the old stopper washer again after removing it.

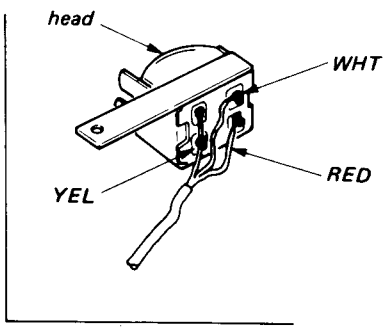


(ASSEMBLING)



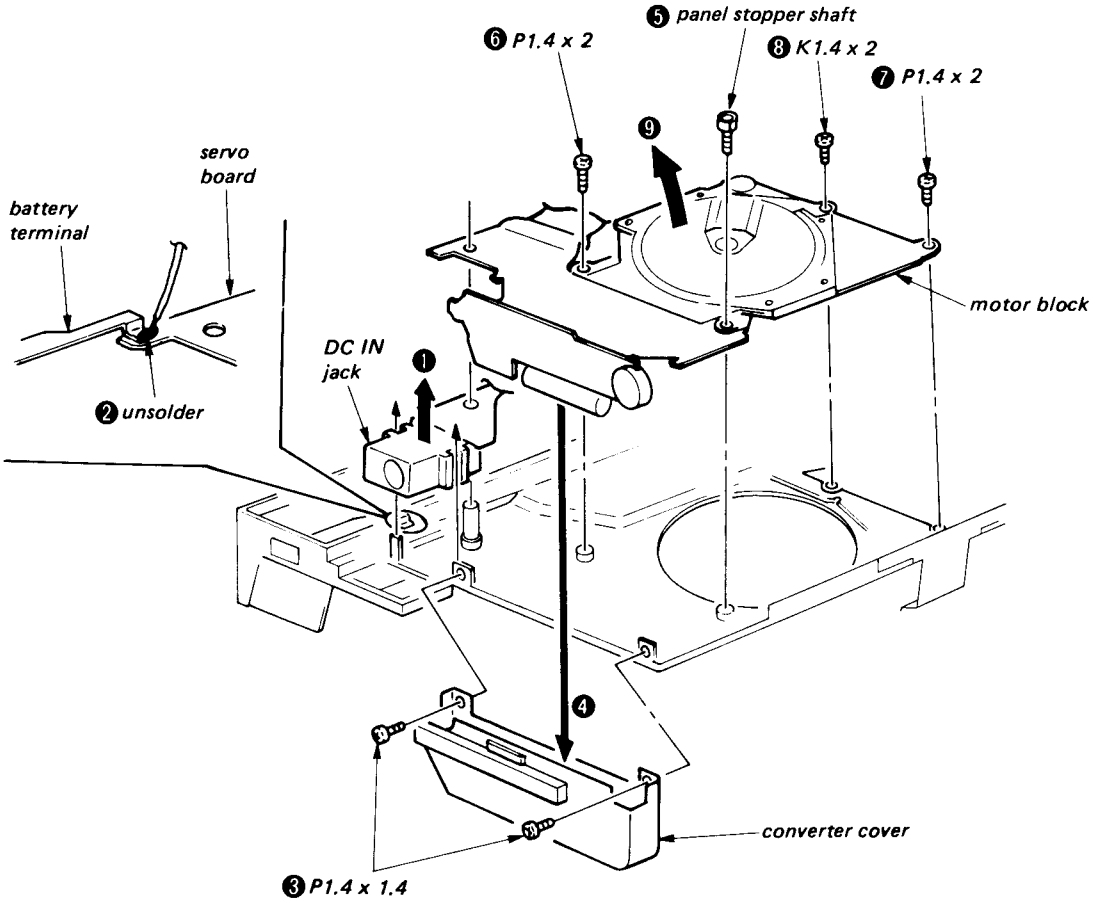
(HEAD WIRING)





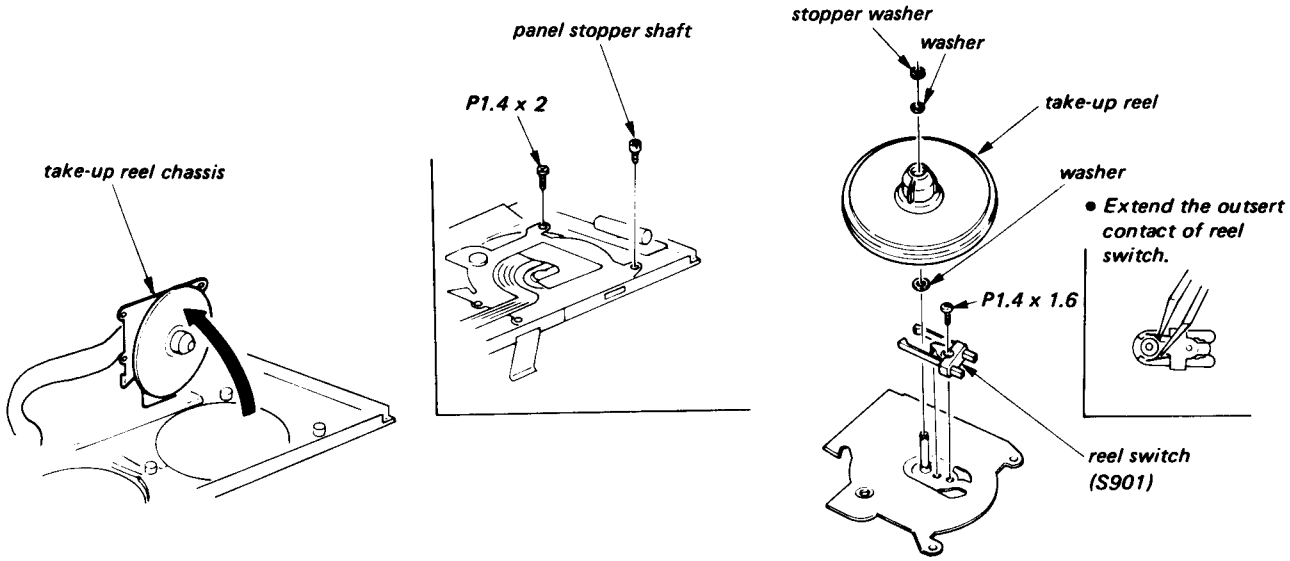
from AUDIO BOARD

MOTOR BLOCK

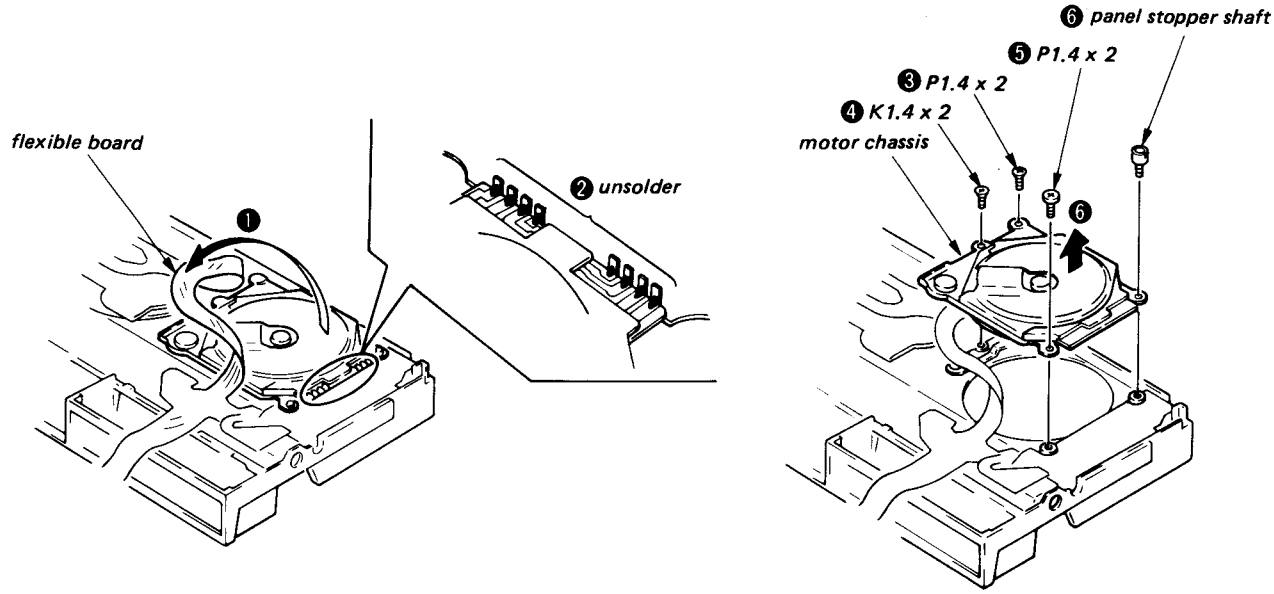


TAKE-UP REEL

Don't use the old stopper washer again after removing it.



MOTOR CHASSIS



SECTION 3
ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

   playback head — pinch roller
   capstan — rubber belts

2. Demagnetize the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage (1.3V) unless otherwise noted.

3-1. MECHANICAL ADJUSTMENTS

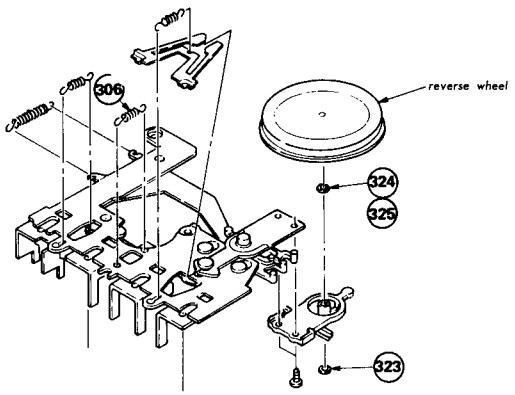
Torque Measurement

Perform with 2.5V DC power.

	Torque mater	Meter reading
FWD	CQ-102C	20 – 40 g·cm (0.28 – 0.56 oz·inch)
FF, REW	CQ-201B	More than 60 g·cm (More than 0.83 oz·inch)
Back Tension	CQ-102C	0 – 2.5 g·cm (0 – 0.035 oz·inch)
Tape Pulling Force	CQ-403	More than 45 g·cm (More than 0.62 oz·inch)

Thrust Clearance Adjustment

	Thrust clearance	Adjustment Parts (Refer to exploded views and parts list.)
Motor wheel	0.2mm	No. 304
Take-up reel	0.05 – 0.15mm	No. 308/340/346
Supply reel	0.05 – 0.15mm	No. 308/324
Reverse wheel	0.05 – 0.15mm	No. 323/324/325



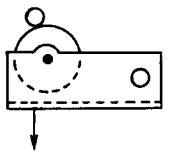
Pinch Roller Pressure Measurement

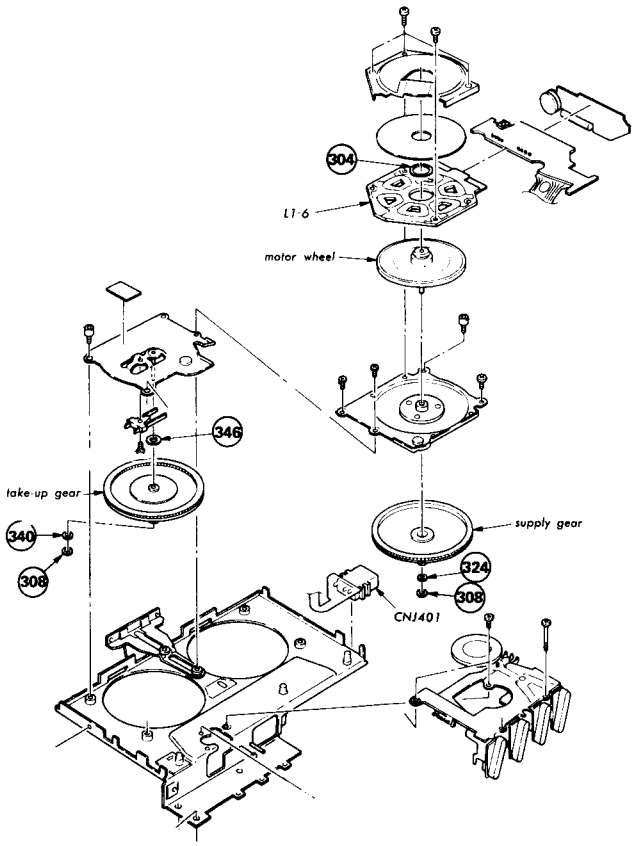
– Forward Mode –

1. Pull the spring scale in the direction shown by the arrow.
2. Slowly return the pinch roller and read the spring scale.

Specification:

150 ± 20 g (4.6 – 6.0 oz)



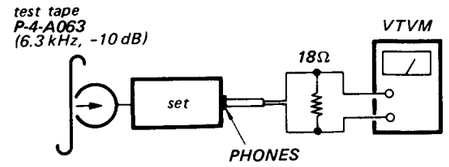


3-2. ELECTRICAL ADJUSTMENT

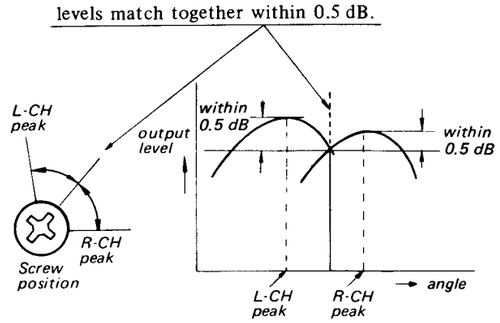
Playback Head Azimuth Adjustment

Procedure:

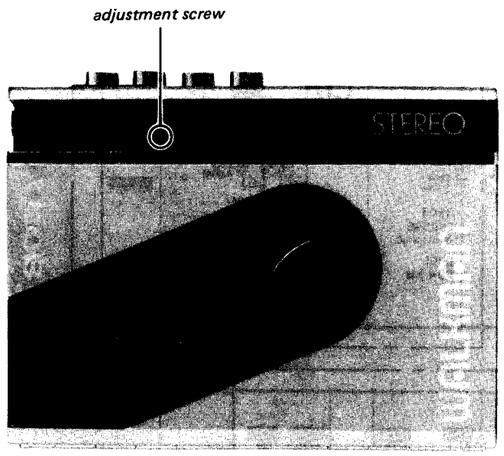
1. Mode: playback



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 0.5 dB.



Adjustment Location:



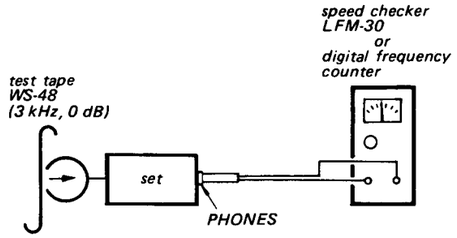
Tape Speed Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

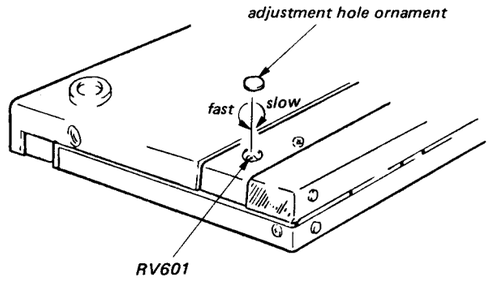
Mode: playback

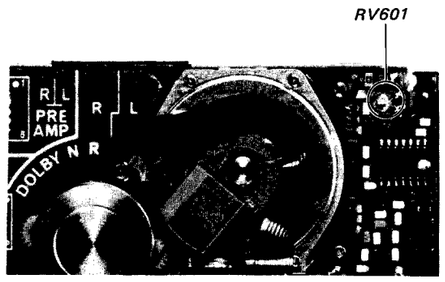


Specification:

Speed checker	Digital frequency counter
±2%	2,940 – 3,060 Hz

Adjustment Location:

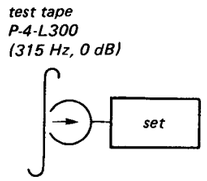




Dolby NR Level Adjustment

Setting:

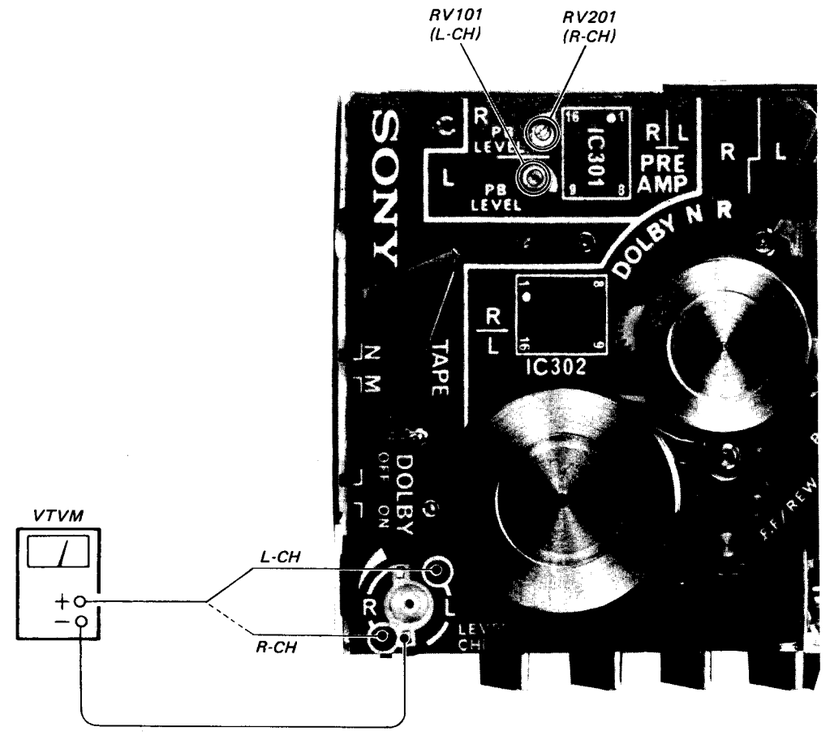
TAPE switch:	NORM
DOLBY NR switch:	off
VOLUME control:	minimum



Procedure:

Adjust RV101 (L-CH), RV201 (R-CH) to obtain −27.7dB ± 1dB (0.028V to 0.036V) output level.

Adjustment Location: audio board



checker
30
or
frequency
er

ornament

V601

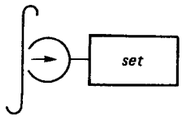
ounter
Hz

Dolby NR Level Adjustment

Setting:

TAPE switch:	NORM
DOLBY NR switch:	off
VOLUME control:	minimum

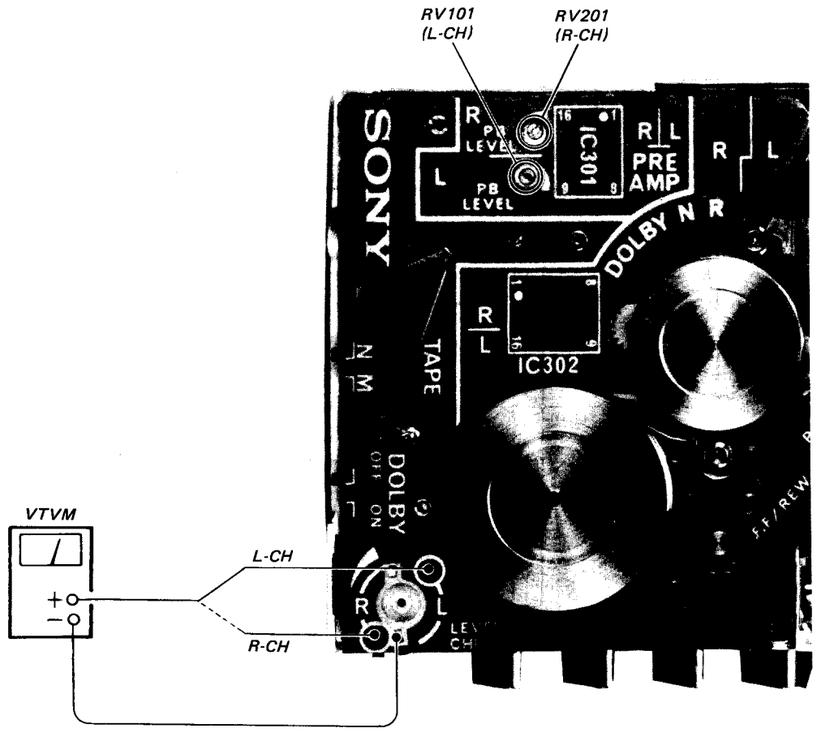
test tape
P-4-L300
(315 Hz, 0 dB)



Procedure:

Adjust RV101 (L-CH), RV201 (R-CH) to obtain −27.7dB ± 1dB (0.028V to 0.036V) output level.

Adjustment Location: audio board



MEMO

SECTION 4
DIAGRAMS

4-1. SCHEMATIC DIAGRAM

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▨ : signal path.
- ▬ : B+ bus.
- ▭ : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is 1.5V and fed with regulated dc power supply from battery terminal.
  Voltages are dc with respect to ground in PLAY mode.
  Voltage variations may be noted due to normal production tolerances.
  ( ) : DOLBY NR (S302) ON
  ≪ ≫ : FF/REW mode
- Waveforms are taken to ground in FWD mode by using oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Switch

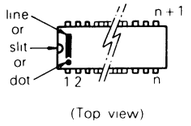
Ref. No.	Switch	Position
S301	TAPE	NORM
S302	DOLBY NR	OFF
S303-1	PLAY	OFF
S303-2	◀◀/▶▶(FF/REW)	OFF
S901	Reel	—
J401	Headphones (switch)	OFF

Note: Voltages are measured with a VOM (50kΩ/V).

- **Semiconductor Lead Layouts**

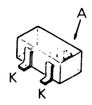
2SA1162
2SA1163
2SB624
2SC1623
2SD596
DTA114TK
DTA124XK
DTC114

BA3304F
CX20085
CX20089
NJM2901MB

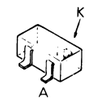


(Top view)

1S2835

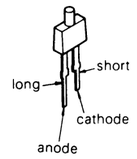


DA106K

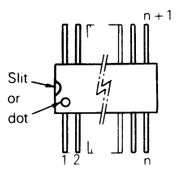


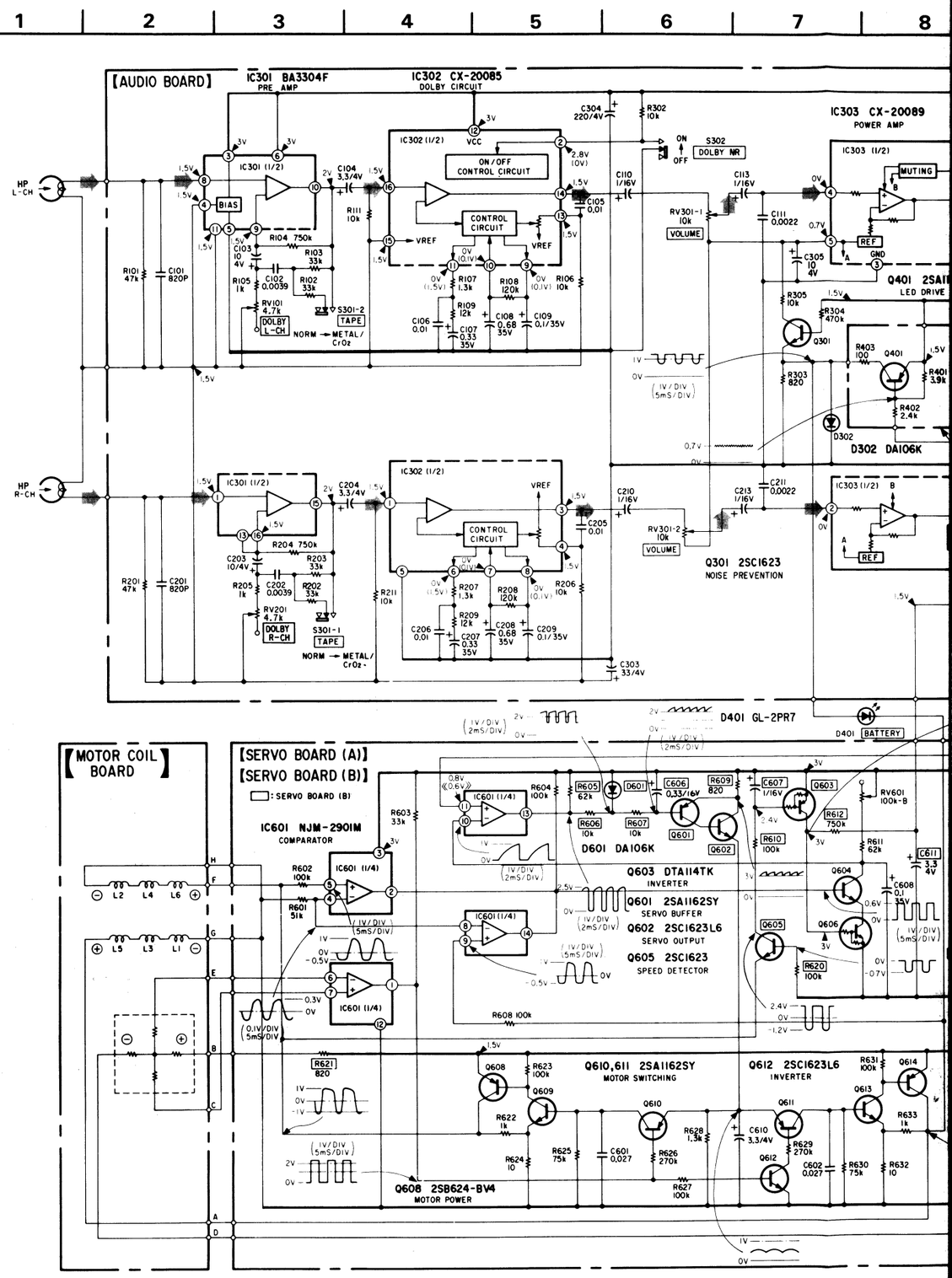
RD4.3M-B3

GL-2PR7



CX20123





AM

s otherwise noted. pF: μμF
ted except for electrolytics

W or less unless otherwise

with no cassette installed.
d with regulated dc power

to ground in PLAY mode.
noted due to normal pro-

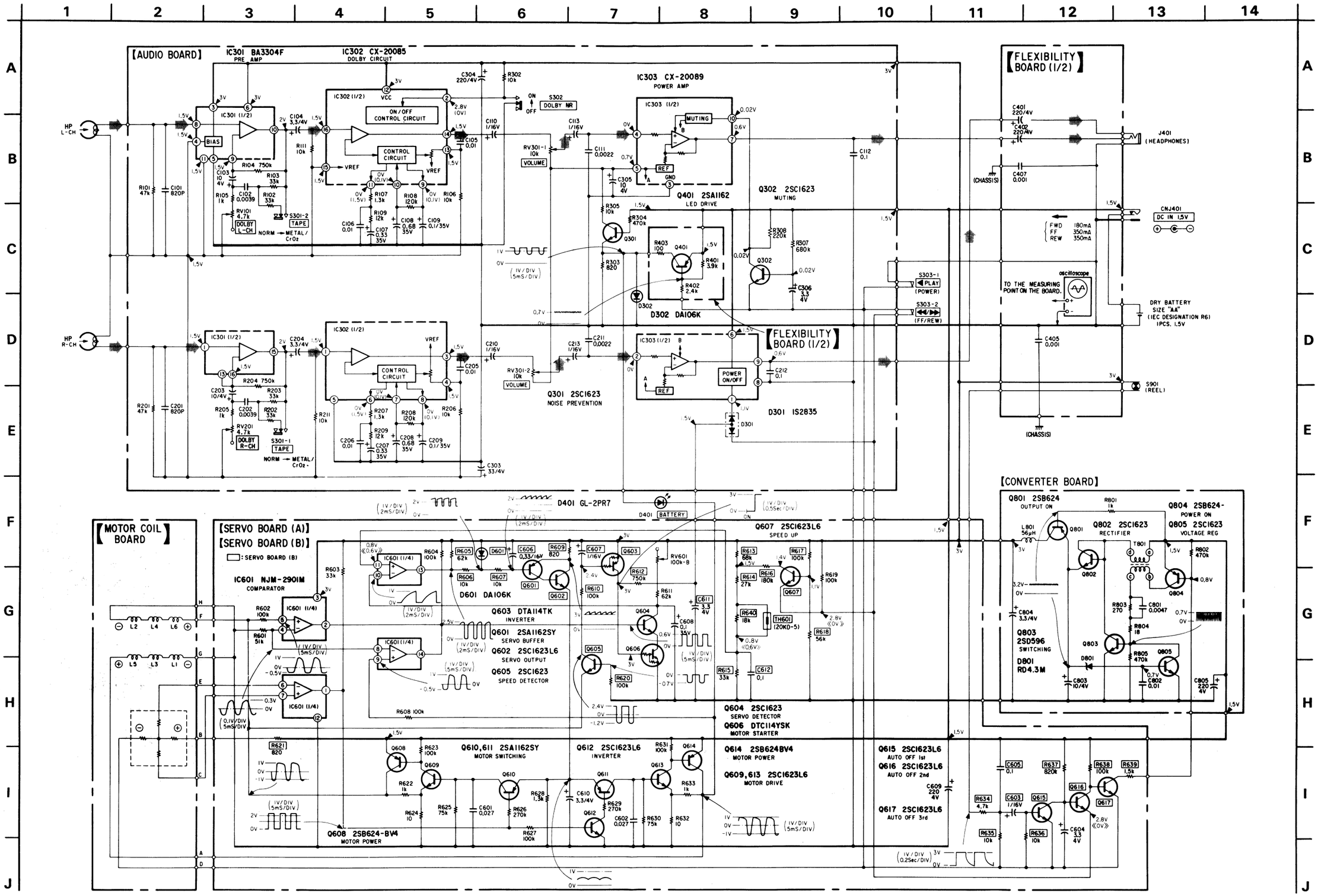
N

nd in FWD mode by using

ted due to normal produc-

	Position
	NORM
	OFF
	OFF
W)	OFF
	—
witch)	OFF

red with a VOM (50kΩ/V).



4-2. MOUNTING DIAGRAM

– Component Side –

【AUDIO BOARD】

RV301 VOLUME

S302 DOLBY NR ON (RED) OFF

S301 TAPE METAL/CrO2 (BLU) NORM

S303 ◀ PLAY
S303-2 (FF/REW)
S303-1 (POWER)

IC301 IC302 IC303

HP

【FLEXIBLEITY BOARD】

S901 (REEL)

D401 BATTERY

J401 (HEADPHONES)

【MOTOR COIL BOARD】

【SERVO(A) BOARD】

REEL SW
LED
1.5V
POWER ON/OFF
FF/REW
POWER
3V
GND

TO THE MEASURING POINT ON THE BOARD.

oscilloscope

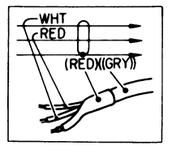
CNJ401 DC IN 1.5V

FWD 180mA
FF 350mA
REW 350mA

DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 1PCS. 1.5V

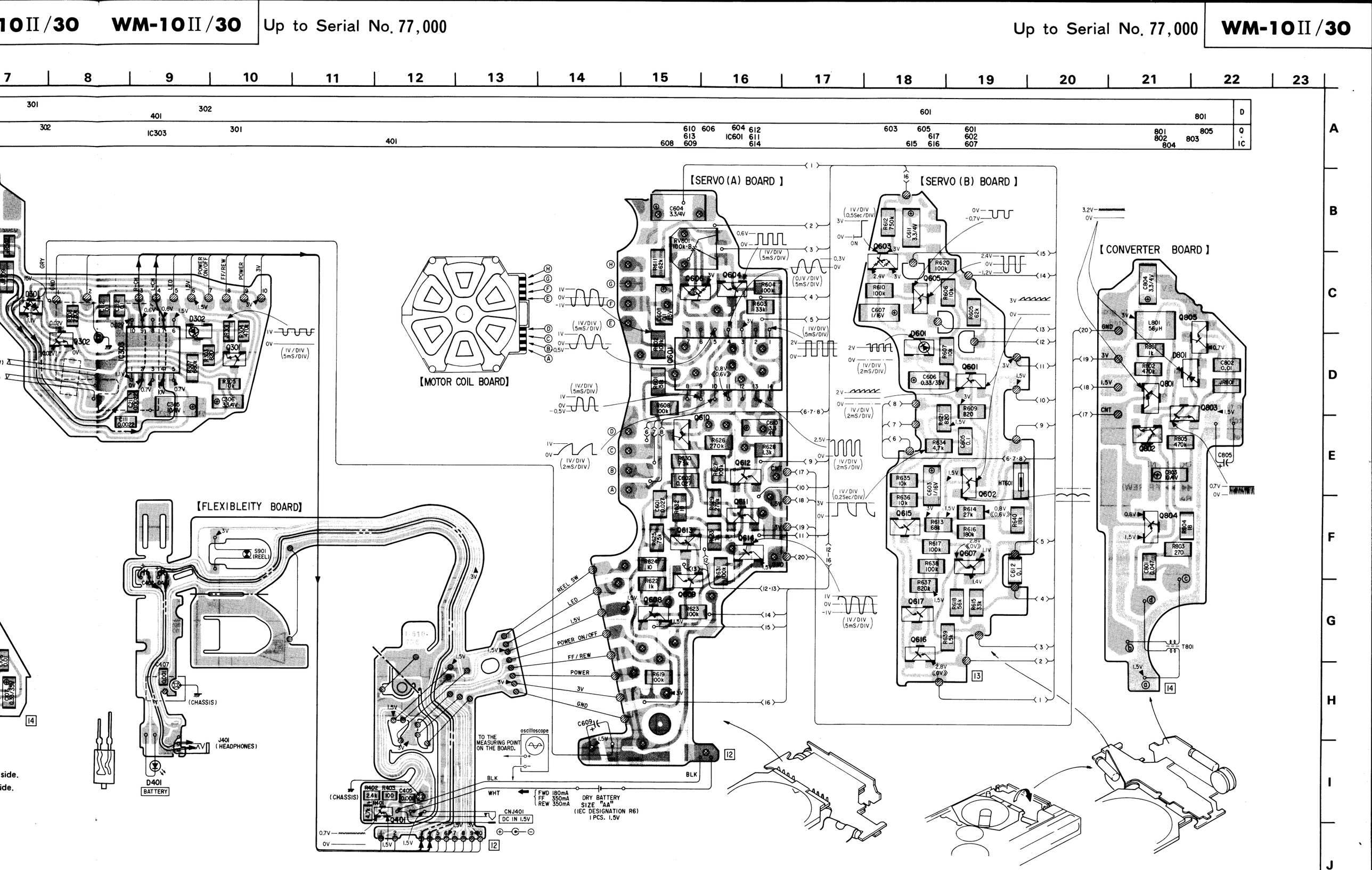
Note:

- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ⊗ : Through hole.
- —▶— : signal path
- —▶ : L-CH signal path
- —▶ : R-CH signal path
- ▒ : B + pattern

Up to Serial No. 77,000 WM-10II/30



4-3. SCHEMATIC DIAGRAM

SERVICING NOTE

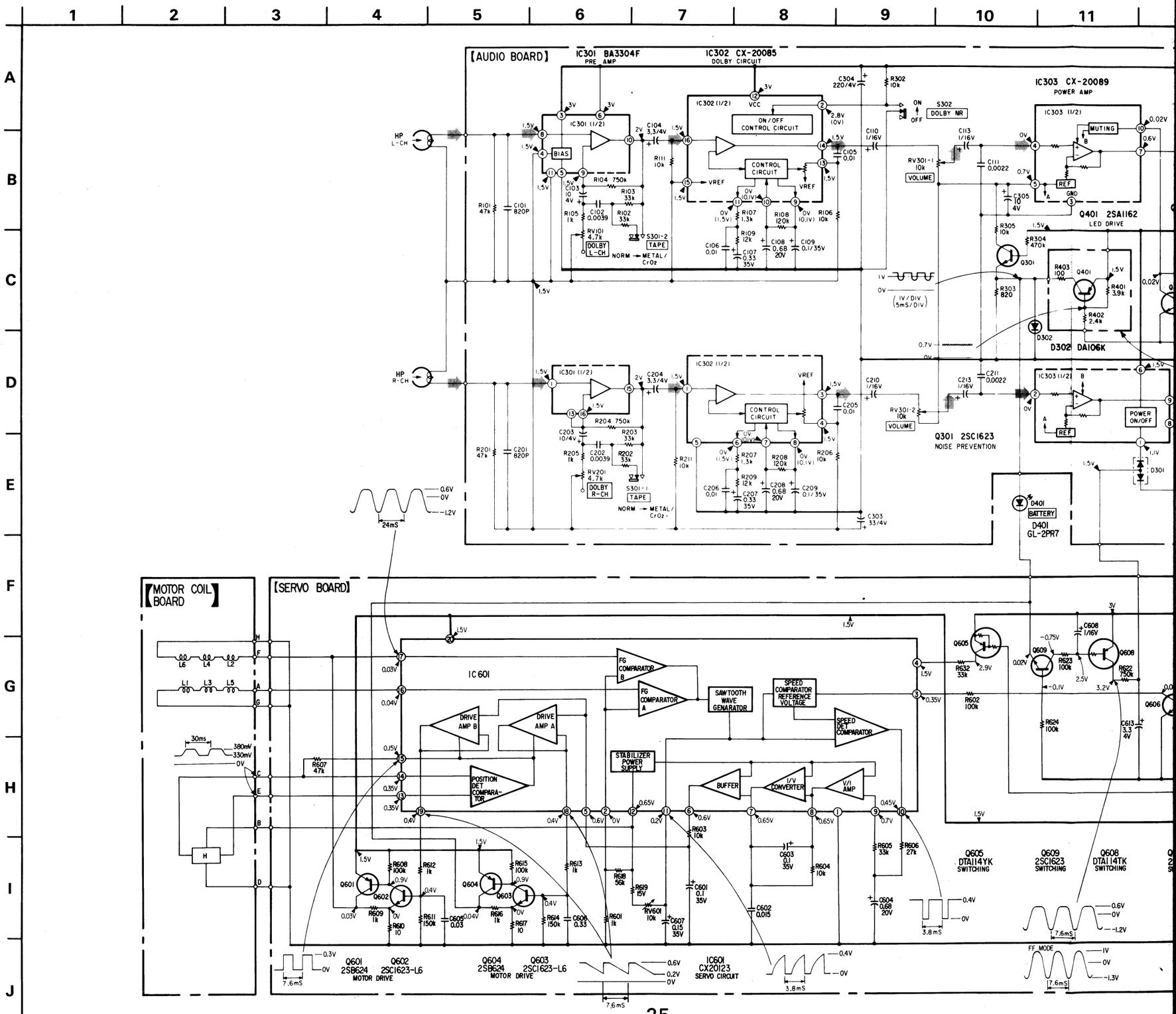
Servo circuit has been changed for the sets with serial number 77,001 and later.

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- ▨ : signal path.
- ▬ : B+ bus.
- ▭ : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is 1.5V and fed with regulated dc power supply from battery terminal.
  Voltages are dc with respect to ground in PLAY mode.
  Voltage variations may be noted due to normal production tolerances.
  ( ) : DOLBY NR (S302) ON
  ≪ ≫ : FF/REW mode
- Waveforms are taken to ground in FWD mode by using oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S301	TAPE	NORM
S302	DOLBY NR	OFF
S303-1	PLAY	OFF
S303-2	◀◀/▶▶(FF/REW)	OFF
S901	Reel	—

Note: Voltages are measured with a VOM (50kΩ/V).



3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H I J

【AUDIO BOARD】

IC301 BA3304F PRE AMP

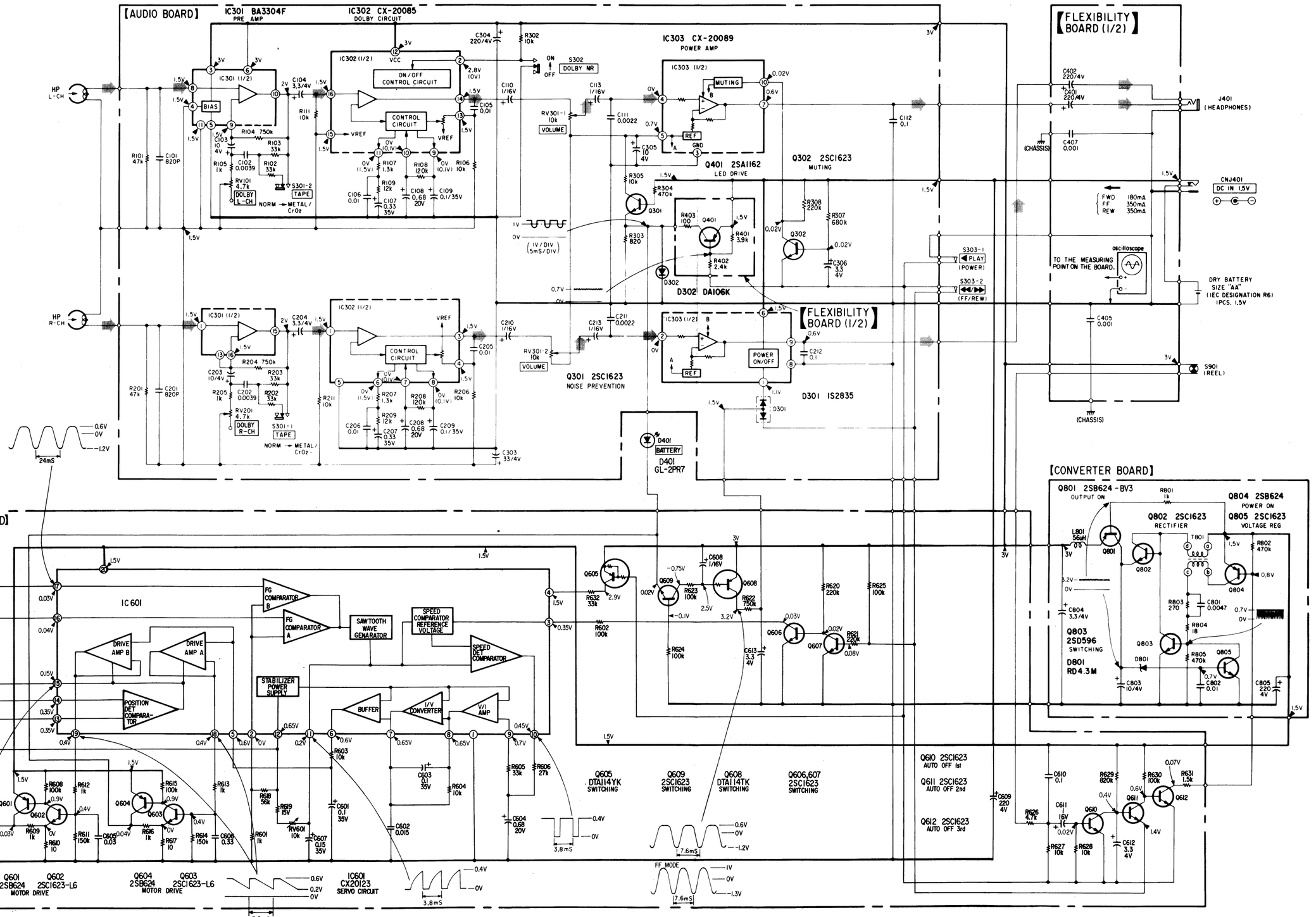
IC302 CX-20085 DOLBY CIRCUIT

IC303 CX-20089 POWER AMP

【FLEXIBILITY BOARD (1/2)】

【CONVERTER BOARD】

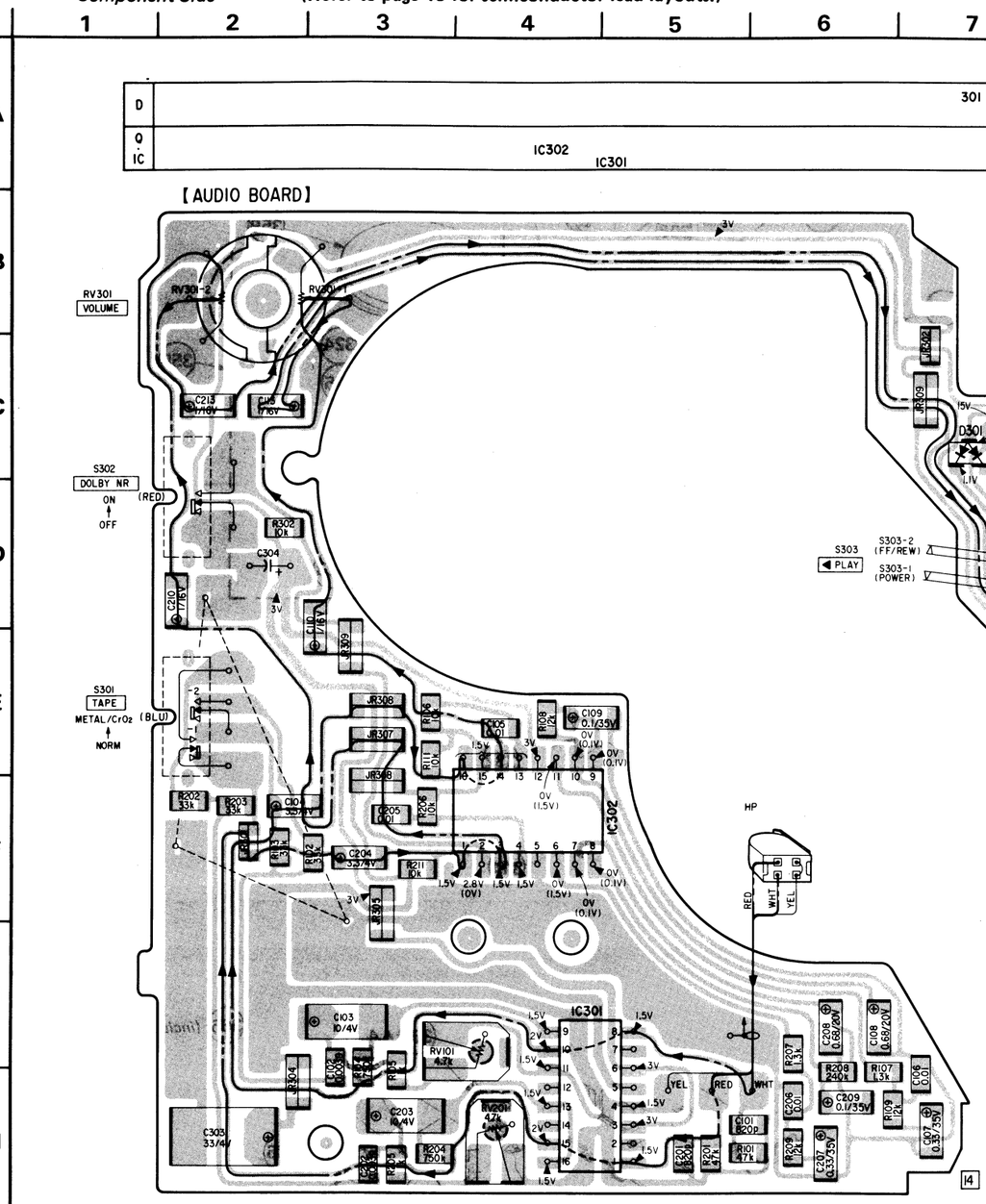
【SERVO BOARD】

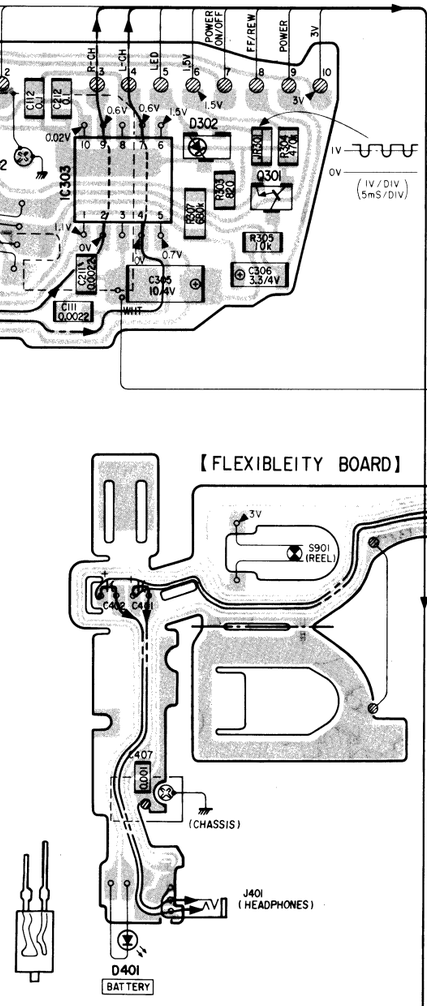


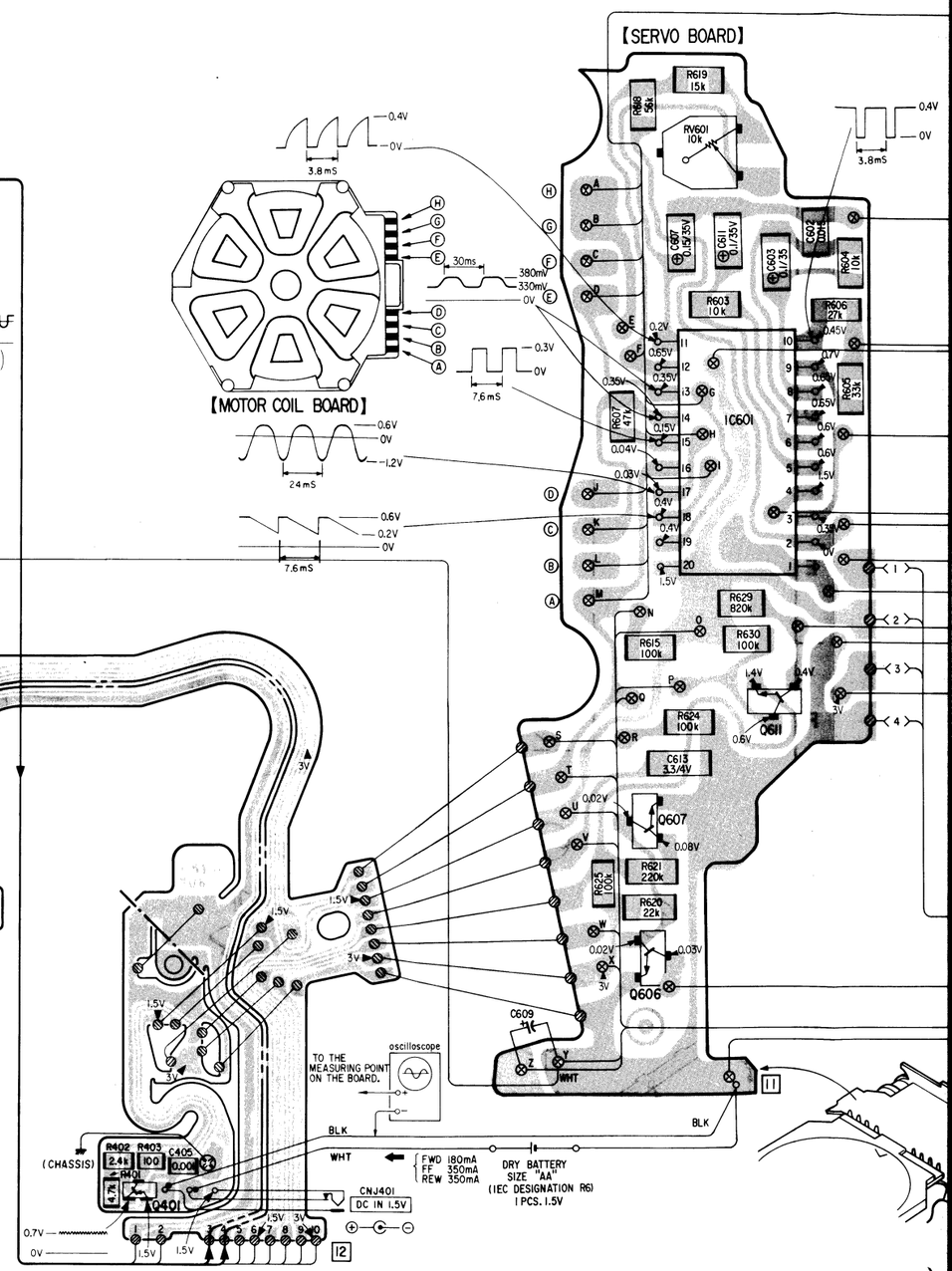
4-4. MOUNTING DIAGRAM

– Component Side –

(Refer to page 18 for semiconductor lead layouts.)

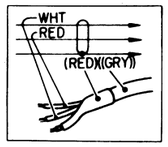






Note:

- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- —● : parts extracted from the conductor side.
- ⊗ : Through hole.
- ——→—— : signal path
- ——→—— : L-CH signal path
- ——→—— : R-CH signal path
- ▒▒ : B + pattern

【SERVO BOARD】

【SERVO BOARD】

【CONVERTER BOARD】

【MOTOR COIL BOARD】

【FLEXIBLEITY BOARD】

IC601

Q601 Q602 Q604 Q605 Q606 Q607 Q608 Q609 Q610 Q611 Q612

Q801 Q802 Q803 Q804 Q805

D301 D302 D401 D801

IC303 IC401

S901 (REEL)

J401 (HEADPHONES)

D401 BATTERY

TO THE MEASURING POINT ON THE BOARD.

oscilloscope

(CHASSIS)

CNJ401 DC IN 1.5V

DRY BATTERY SIZE "AA" (IEC DESIGNATION R6) 1PCS. 1.5V

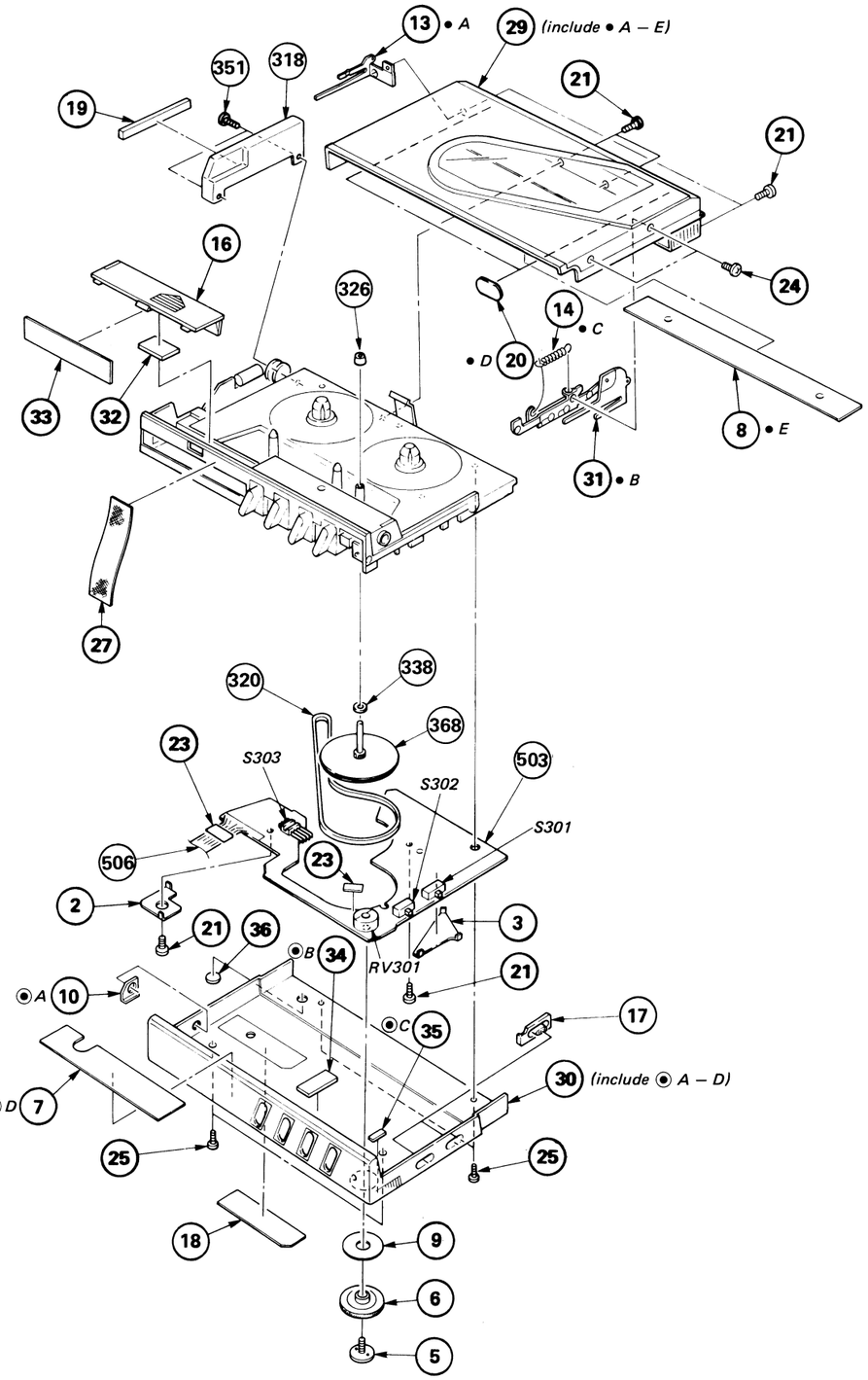
FWD 180mA
FF 350mA
REW 350mA

FF MODE

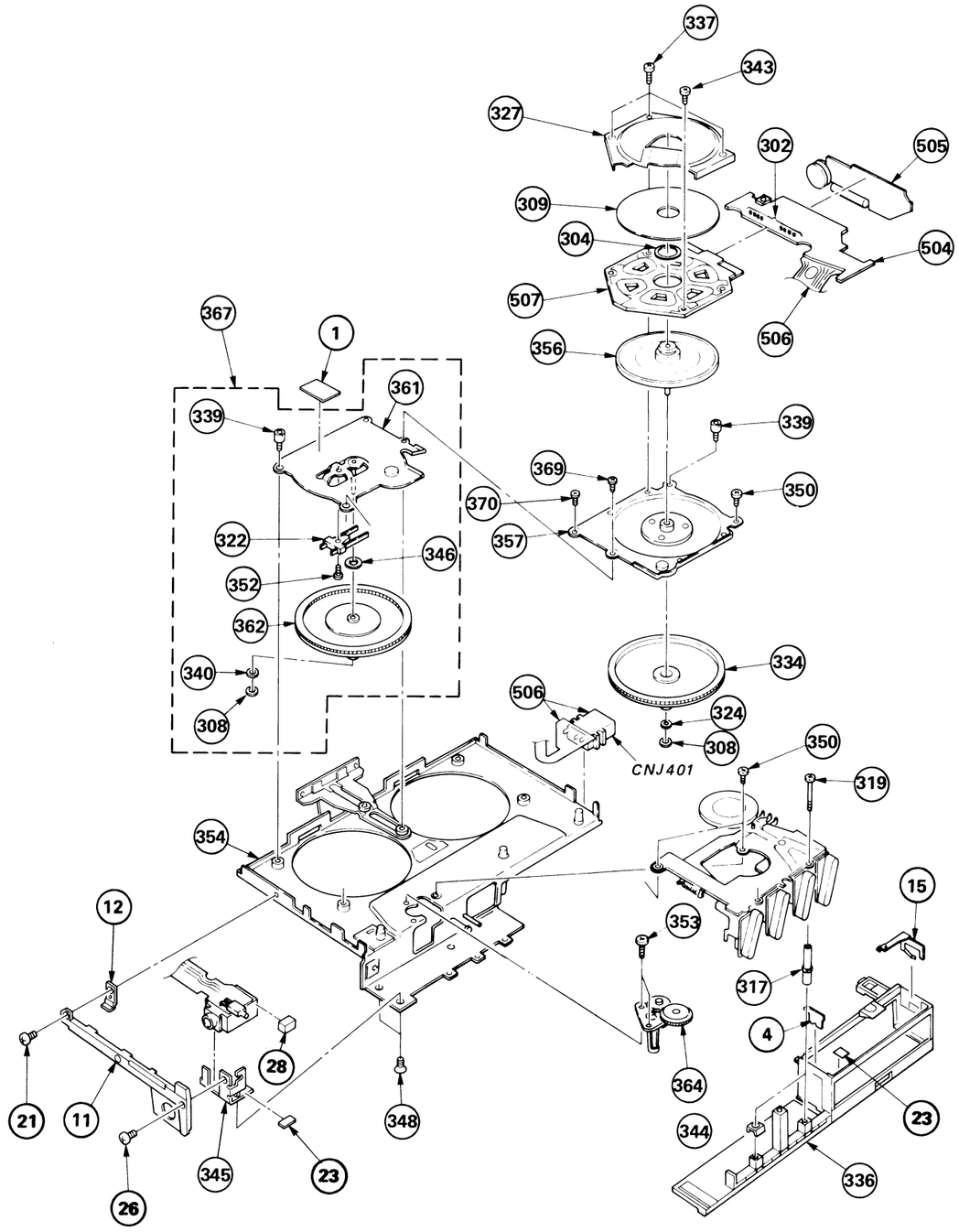
WM-10II/30 WM-10II

SECTION 5
EXPLODED VIEWS AND PARTS LIST

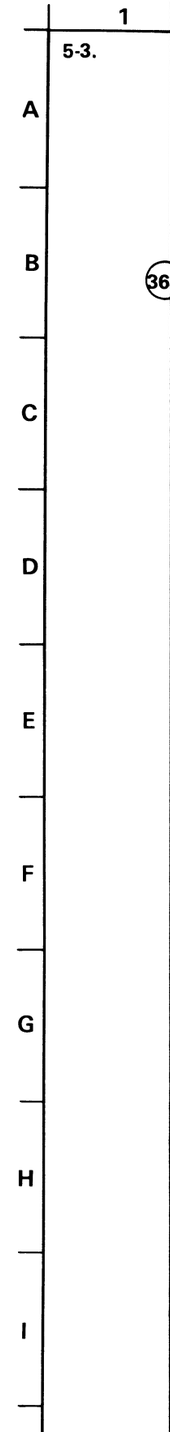
5-1.



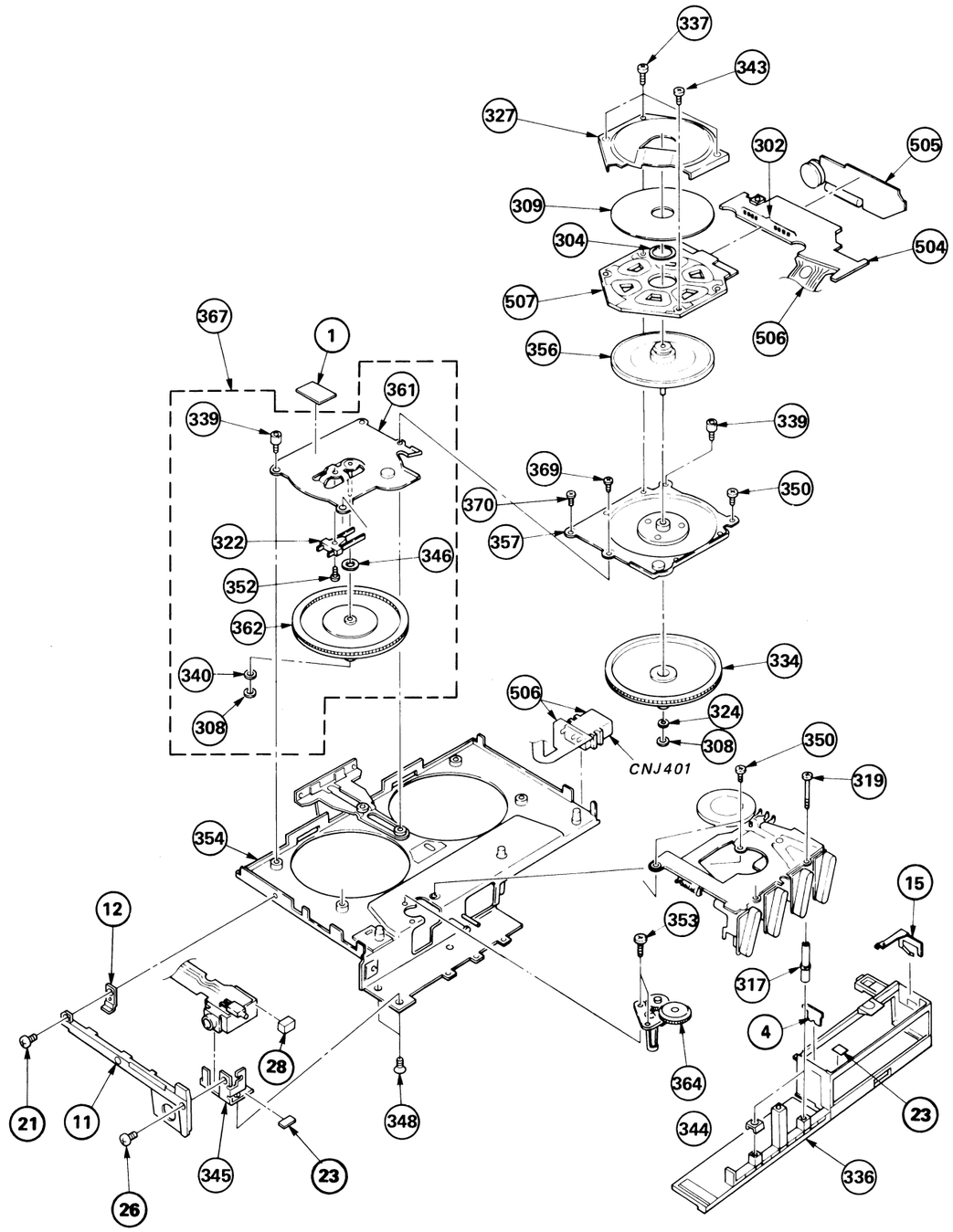
5-2.



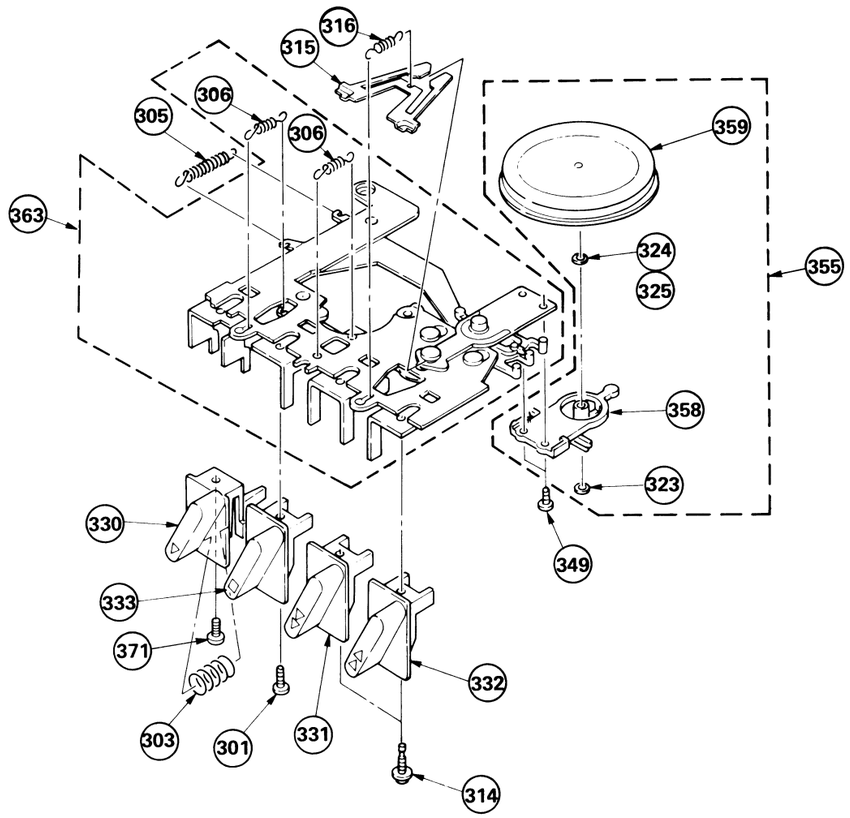
5-3.



5-2.


337
343
327
302
505
309
304
504
507
506
356
367
1
361
339
339
369
370
350
357
322
346
352
362
340
308
334
506
324
308
CNJ401
350
319
354
353
15
317
12
4
28
364
348
21
11
345
23
344
23
336
26

5-3.


316
315
306
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363
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358
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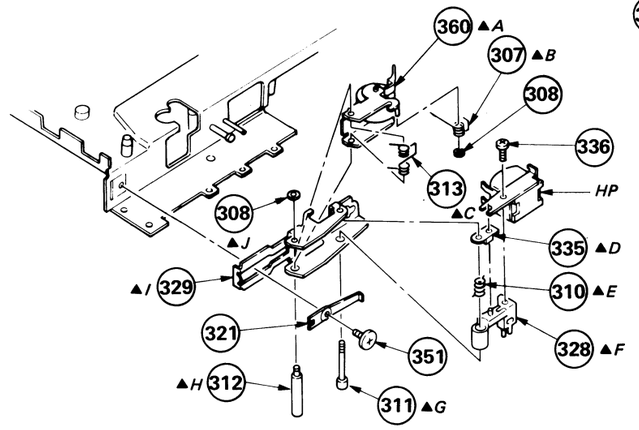
333
371
332
303
301
331
314


365 (include ▲A – J)
360 ▲A
307 ▲B
308
336
313
HP
▲C
308
▲J
335 ▲D
▲I 329
310 ▲E
321
351
328 ▲F
▲H 312
311 ▲G

GENERAL SECTION

No.	Part No.	Description
1	*3-312-754-00	SHEET (A), INSULATING
2	*3-315-302-00	TERMINAL BOARD (C), GROUND
3	*3-315-303-00	TERMINAL BOARD (B), GROUND
4	3-315-306-00	TERMINAL (A), BATTERY
5	3-315-308-00	SCREW, CONTROL
6	3-315-322-00	KNOB, CONTROL
7	3-315-442-00	LABEL, POLARITY
8	3-315-466-00	SHEET, PANEL
9	3-315-467-00	WASHER, CONTROL
10	3-315-922-00	COVER, DC.J
11	3-315-929-31	ORNAMENT (B), REEL
12	3-315-942-00	RETAINER, STOPPER
13	3-315-944-01	RETAINER, PANEL
14	3-315-974-01	SPRING, TENSION
15	3-317-704-11	TERMINAL BATTERY
16	3-319-305-31	LID, BATTERY CASE
17	3-323-120-01	KNOB, SWITCH
18	3-323-121-01	(US,Canadian)...LABEL, MODEL NUMBER (For BLACK)
18	3-323-121-11	(US,Canadian)...LABEL, MODEL NUMBER (EXCEPT For BLACK)
18	3-323-127-01	(AEP,UK,E)...LABEL, MODEL NUMBER (For BLACK)
18	3-323-127-11	(AEP,UK,E)...LABEL, MODEL NUMBER (EXCEPT For BLACK)
19	3-323-129-01	PLATE, BLIND
20	3-323-130-07	CUSHION, CASSETTE
21	3-703-816-01	SCREW (M1.4)(EXCEPT For BLACK)
21	3-703-816-02	SCREW (M1.4)(BLACK)
22	3-703-929-01	SHEET (B), INSULATING
23	3-831-441-XX	SPACER
24	7-627-551-07	SCREW, PRECISION +P 1.4X1.6 (EXCEPT For BLACK)
24	7-627-551-08	SCREW, PRECISION +P 1.4X1.6(BLACK)
25	7-627-551-17	SCREW, PRECISION +P 1.4X2 (EXCEPT For BLACK)
25	7-627-551-18	SCREW, PRECISION +P 1.4X2(BLACK)
26	7-627-850-47	SCREW, PRECISION +P 1.4X1.6
27	9-911-816-01	CLOTH, BATTERY DRAWING
28	9-911-841-XX	CUSHION, CASSETTE LID
29	X-3323-112-1	(WM-10II) PANEL ASSY, CASSETTE (For SILVER)
29	X-3323-113-1	(WM-10II) PANEL ASSY, CASSETTE (For BLACK)
29	X-3323-122-1	(WM-10II) PANEL ASSY, CASSETTE (For RED)
29	X-3323-123-1	(WM-10II) PANEL ASSY, CASSWTTE (For BLUE)
29	X-3323-124-1	(WM-30) PANEL ASSY, CASSETTE (For SILVER)
29	X-3323-125-1	(WM-30) PANEL ASSY, CASSETTE (For BLACK)
29	X-3323-126-1	(WM-30) PANEL ASSY, CASSETTE (For RED)
29	X-3323-127-1	(WM-30) PANEL ASSY, CASSETTE (For BLUE)

GENERAL SECTION

No.	Part No.	Description
30	X-3323-110-1	PANEL ASSY, CONTROL (For SILVER)
30	X-3323-111-1	PANEL ASSY, CONTROL (For BLACK)
30	X-3323-114-1	PANEL ASSY, CONTROL (For RED)
30	X-3323-115-1	PANEL ASSY, CONTROL (For BLUE)
31	X-3315-910-0	PLATE ASSY, SLIDE
32	3-454-023-00	CUSHION
33	3-523-131-01	LABEL, BATTERY
34	3-370-611-11	CUSHION BATTERY
35	3-553-566-01	CUSHION
36	3-315-457-01	ORNAMENT, ADJUSTMENT HOLE (EXCEPY For BLACK)
36	3-315-457-11	ORNAMENT, ADJUSTMENT HOLE (For BLACK)

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
101	1-528-052-00	BATTERY,ALKALINE MANGANIN(AM3)
102	3-323-101-01	SHEET, PROTECTION
103	3-323-102-01	CUSHION (A)
104	3-323-103-01	CUSHION (B)
105	3-323-104-01	(US,Canadian)...INDIVIDUAL CARTON
105	3-323-113-01	(AEP,UK,E).....INDIVIDUAL CARTON
106	3-527-213-00	LABEL, SERIAL NUMBER
107	3-701-622-00	BAG, POLYETHYLENE
108	3-703-710-01	STICKER, SONY SYMBOL (12)
109	3-760-086-11	(E).....MANUAL, INSTRUCTION
109	3-760-086-21	(US,Canadian,AEP,UK)..MANUAL, INSTRUCTION
109	3-760-086-41	(AEP)....MANUAL, INSTRUCTION
110	3-795-748-21	SAFETY INSTRUCTIONS, HEADPHONE
111	3-795-922-01	CARD, ILLUSTRATION
112	3-323-128-01	CASE, CARRYING (For SILVER)
112	3-323-128-11	CASE, CARRYING (For BLACK)
112	3-323-128-21	CASE, CARRYING (For RED)
112	3-323-128-31	CASE, CARRYING (For BLUE)
113	8-951-187-91	MDR-W30L(B) SET

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
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- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

MECHANISM SECTION

No.	Part No.	Description
301	3-305-528-11	SCREW, STOPPER
302	3-315-301-00	TERMINAL BOARD, MOTOR
303	3-315-331-00	SPRING, COMPRESSION
304	3-315-332-01	SPACER (t=0.05)
304	3-315-332-11	SPACER (t=0.1)
304	3-315-332-21	SPACER (t=0.125)
305	3-315-341-00	SPRING, TENSION (POWER TENSION)
306	3-315-343-00	SPRING, TENSION
307	3-315-357-00	SPRING
308	3-315-384-01	WASHER, STOPPER (t=0.13)
308	3-315-384-11	WASHER, STOPPER (t=0.25)
308	3-315-384-21	WASHER, STOPPER (t=0.2)
308	3-315-384-41	WASHER, STOPPER (t=0.35)
309	3-315-390-00	PLATE, HYSTERESIS
310	3-315-391-00	SPRING
311	3-315-392-00	SCREW, ADJUSTMENT
312	3-315-393-00	SHAFT, PINCH LEVER
313	3-315-394-00	SPRING
314	3-315-395-00	SCREW, BUTTON
315	3-315-396-00	LEVER (C), F.R
316	3-315-397-00	SPRING, TENSION (POWER TENSION)
317	3-315-399-00	COLLAR, BUTTON
318	3-315-402-11	COVER, CONVERTER
319	3-315-404-00	SCREW
320	3-315-405-00	BELT
321	3-315-406-00	SPRING
322	3-315-412-00	CONTACT, OUTSERT
323	3-315-414-00	WASHER (t=0.25)
323	3-315-414-11	WASHER (t=0.19)
323	3-315-414-21	WASHER (t=0.13)
324	3-315-415-00	WASHER (1.5-2.3)(t=0.08)
324	3-315-415-11	WASHER (1.5-2.3)(t=0.1)
325	3-315-416-00	WASHER (t=0.1)
325	3-315-416-21	WASHER (t=0.19)
326	3-315-417-00	BUSHING, CAPSTAN
327	*3-315-419-00	PLATE, SHIELD
328	3-315-430-00	TABLE, HEAD
329	3-315-431-00	CHASSIS, HEAD
330	3-315-432-00	BUTTON, PLAY
331	3-315-433-00	BUTTON, FF
332	3-315-434-00	BUTTON, REW
333	3-315-435-00	BUTTON, STOP
334	3-315-436-00	GEAR (OUTSERT), SUPPLY REEL
335	3-315-463-00	PLATE, GROUND, HEAD
336	3-315-484-02	SCREW (M2X3), HEAD, WASHER
337	3-315-485-01	SCRWE (M1.4X2.3), PRECISION

MECHANISM SECTION

No.	Part No.	Description
338	3-315-495-01	WASHER (t=0.25)
338	3-315-495-11	WASHER (t=0.13)
338	3-315-495-21	WASHER (t=0.18)
338	3-315-495-31	WASHER (t=0.3)
339	3-315-990-01	SHAFT, STOPPER, PANEL
340	3-317-701-01	WASHER (t=0.45)
340	3-317-701-11	WASHER (t=0.25)
341	3-317-702-01	SPACER (D)(t=0.2)
341	3-317-702-11	SPACER (D)(t=0.05)
342	3-317-703-01	SPACER (E)(t=0.08)
342	3-317-703-11	SPACER (E)(t=0.2)
343	3-317-706-01	SCREW (M1.4X2.3)
344	*3-319-301-01	RETAINER, LEAD, HEAD
345	3-323-115-01	BRACKET, H.P.J
346	3-701-438-21	WASHER (t=0.2)
346	3-701-438-31	WASHER (t=0.3)
346	3-701-438-41	WASHER (t=0.35)
347	3-701-443-01	WASHER (t=0.13)
347	3-701-443-11	WASHER (t=0.25)
348	7-627-455-07	SCREW, PRECISION +K 1.4X1.4
349	7-627-551-47	SCREW, PRECISION +P 1.4X1.4
350	7-627-850-07	SCREW, PRECISION +P 1.4X2
351	7-627-850-37	SCREW, PRECISION +P 1.4X1.4
352	7-627-850-48	+P 1.4X1.6
353	7-627-850-78	PRECISION SCREW +P 1.4X1.8
354	A-3125-009-A	CHASSIS ASSY, REEL
355	A-3125-002-A	WHEEL BLOCK ASSY, REVERSE
356	A-3133-205-A	WHEEL ASSY BLOCK ASSY, MOTOR
357	A-3133-206-A	RIVETING ASSY, MOTOR SLEEVE
358	X-3315-307-0	LEVER (B) ASSY, FR
359	X-3315-308-0	WHEEL ASSY, REVERSE
360	X-3315-311-0	PINCH LEVER ASSY
361	X-3315-314-0	CHASSIS ASSY, TAKE-UP REEL
362	X-3315-315-0	GEAR ASSY, TAKE-UP REEL
363	X-3315-360-1	PLATE ASSY, CONTROL
364	X-3315-343-1	SLEEVE COMP ASSY
365	X-3315-346-1	CHASSIS ASSY, HEAD
366	3-315-939-31	ORNAMENT, REEL
367	A-3163-080-A	CHASSIS BLOCK ASSY, T REEL
368	X-3317-508-1	FLYWHEEL ASSY
369	7-627-551-17	SCREW, PRECISION +P 1.4X2.0
370	7-627-451-37	SCREW, PRECISION +K 1.4X2.0
371	3-305-528-21	SCREW, STOPPER

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ELECTRICAL PARTS

Ref.No.	Part No.	Description		
501	1-462-209-00	COIL, MOTOR (STATOR)		
502	*1-610-702-00	PC BOARD, CONVERTER		
503	*A-3015-198-A	MOUNTED PCB, AUDIO		
504	A-3065-035-A	SERVO UNIT		
504	A-3015-319-A	SERVO UNIT (SIRIAL No.77,001 and later)		
505	A-3065-038-A	MOUNTED PCB, CONVERTER		
506	A-3089-055-A	PC BOARD ASSY, FLEXIBLE		
507	A-3133-207-A	COIL BLOCK ASSY, MOTOR		
C101	1-163-008-00	CERAMIC CHIP 820PF	10%	50V
C102	1-163-016-00	CERAMIC CHIP 0.0039MF	10%	50V
C103	1-135-104-00	TANTAL. CHIP 10MF	10%	4V
C104	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C105	1-163-021-00	CERAMIC CHIP 0.01MF	5%	50V
C106	1-163-021-00	CERAMIC CHIP 0.01MF	5%	50V
C107	1-135-073-00	TANTAL. CHIP 0.33MF	10%	35V
C108	1-135-087-21	TANTAL. CHIP 0.68MF	10%	20V
C109	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V
C110	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C111	1-163-013-00	CERAMIC CHIP 0.0022MF	10%	50V
C112	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C113	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C303	1-135-107-00	TANTAL. CHIP 33MF	20%	4V
C304	1-124-413-00	ELECT 220MF	20%	4V
C305	1-135-104-00	TANTAL. CHIP 10MF	10%	4V
C306	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C401	1-124-413-00	ELECT 220MF	20%	4V
C402	1-124-413-00	ELECT 220MF	20%	4V
C405	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C407	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C601	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C602	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C603	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C604	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C605	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C606	1-135-073-00	TANTAL. CHIP 0.33MF	10%	35V
C607	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C608	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V
C609	1-124-413-00	ELECT 220MF	20%	4V
C610	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C611	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C612	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C801	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V
C802	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C803	1-135-104-00	TANTAL. CHIP 10MF	20%	4V
C804	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C805	1-124-413-00	ELECT 220MF	20%	4V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
CNJ401	1-507-894-00	JACK, EXTERNAL POWER			
D301	8-719-100-03	DIODE 1S2835			
D302	8-719-908-30	DIODE DA106K			
D401	8-719-908-40	DIODE GL-2PR7			
D601	8-719-908-30	DIODE DA106K			
D801	8-719-105-65	DIODE RD4.3M-B3			
HP	8-825-507-11	HEAD (PP227-3602H)			
IC301	8-759-910-18	IC BA3304F			
IC302	8-759-908-08	IC CX20085			
IC303	8-759-600-67	IC CX20089			
IC601	8-759-700-75	IC NJM2901MB			
J401	1-507-895-00	JACK, HEADPHONE (WITH SW)			
JR301	1-216-295-00	METAL CHIP	0	5%	1/10W
JR302	1-216-295-00	METAL CHIP	0	5%	1/10W
JR303	1-216-296-00	METAL CHIP	0	5%	1/8W
JR304	1-216-296-00	METAL CHIP	0	5%	1/8W
JR305	1-216-296-00	METAL CHIP	0	5%	1/8W
JR306	1-216-296-00	METAL CHIP	0	5%	1/8W
JR307	1-216-296-00	METAL CHIP	0	5%	1/8W
JR308	1-216-296-00	METAL CHIP	0	5%	1/8W
JR309	1-216-296-00	METAL CHIP	0	5%	1/8W
JR310	1-216-295-00	METAL CHIP	0	5%	1/10W
JR801	1-216-295-00	METAL CHIP	0	5%	1/10W
L801	1-408-946-00	INDUCTOR CHIP 56UH			
Q301	8-729-100-66	TRANSISTOR 2SC1623			
Q302	8-729-216-22	TRANSISTOR 2SA1162			
Q401	8-729-216-22	TRANSISTOR 2SA1162			
Q402	8-729-216-22	TRANSISTOR 2SA1162			
Q601	8-729-216-22	TRANSISTOR 2SA1162			
Q602	8-729-100-66	TRANSISTOR 2SC1623			
Q603	8-729-900-51	TRANSISTOR DTA114TK			
Q604	8-729-100-66	TRANSISTOR 2SC1623			
Q605	8-729-100-66	TRANSISTOR 2SC1623			
Q606	8-729-900-52	TRANSISTOR DTC114			
Q607	8-729-100-66	TRANSISTOR 2SC1623			
Q608	8-729-102-44	TRANSISTOR 2SB624			
Q609	8-729-100-66	TRANSISTOR 2SC1623			
Q610	8-729-216-22	TRANSISTOR 2SA1162			
Q611	8-729-216-22	TRANSISTOR 2SA1162			
Q612	8-729-100-66	TRANSISTOR 2SC1623			
Q613	8-729-100-66	TRANSISTOR 2SC1623			
Q614	8-729-102-44	TRANSISTOR 2SB624			

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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q615	8-729-100-66	TRANSISTOR 2SC1623			
Q616	8-729-100-66	TRANSISTOR 2SC1623			
Q617	8-729-100-66	TRANSISTOR 2SC1623			
Q801	8-729-102-44	TRANSISTOR 2SB624			
Q802	8-729-100-66	TRANSISTOR 2SC1623			
Q803	8-729-159-64	TRANSISTOR 2SD596			
Q804	8-729-102-44	TRANSISTOR 2SB624			
Q805	8-729-100-66	TRANSISTOR 2SC1623			
R101	1-216-089-00	METAL CHIP	47K	5%	1/10W
R102	1-216-085-00	METAL CHIP	33K	5%	1/10W
R103	1-216-085-00	METAL CHIP	33K	5%	1/10W
R104	1-216-118-00	METAL CHIP	750K	5%	1/10W
R105	1-216-049-00	METAL CHIP	1K	5%	1/10W
R106	1-216-073-00	METAL CHIP	10K	5%	1/10W
R107	1-216-052-00	METAL CHIP	1.3K	5%	1/10W
R108	1-216-099-00	METAL CHIP	120K	5%	1/10W
R109	1-216-075-00	METAL CHIP	12K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W
R303	1-216-047-00	METAL CHIP	820	5%	1/10W
R304	1-216-113-00	METAL CHIP	470K	5%	1/10W
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-266-00	METAL CHIP	680K	5%	1/8W
R308	1-216-105-00	METAL CHIP	220K	5%	1/10W
R401	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R402	1-216-058-00	METAL CHIP	2.4K	5%	1/10W
R403	1-216-025-00	METAL CHIP	100	5%	1/10W
R601	1-216-090-00	METAL CHIP	51K	5%	1/10W
R602	1-216-097-00	METAL CHIP	100K	5%	1/10W
R603	1-216-085-00	METAL CHIP	33K	5%	1/10W
R604	1-216-097-00	METAL CHIP	100K	5%	1/10W
R605	1-216-092-00	METAL CHIP	62K	5%	1/10W
R606	1-216-073-00	METAL CHIP	10K	5%	1/10W
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W
R608	1-216-097-00	METAL CHIP	100K	5%	1/10W
R609	1-216-047-00	METAL CHIP	820	5%	1/10W
R610	1-216-097-00	METAL CHIP	100K	5%	1/10W
R611	1-216-092-00	METAL CHIP	62K	5%	1/10W
R612	1-216-118-00	METAL CHIP	750K	5%	1/10W
R613	1-216-093-00	METAL CHIP	68K	5%	1/10W
R614	1-216-083-00	METAL CHIP	27K	5%	1/10W
R615	1-216-085-00	METAL CHIP	33K	5%	1/10W
R616	1-216-103-00	METAL CHIP	180K	5%	1/10W
R617	1-216-097-00	METAL CHIP	100K	5%	1/10W
R618	1-216-091-00	METAL CHIP	56K	5%	1/10W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R619	1-216-097-00	METAL CHIP	100K	5%	1/10W
R620	1-216-097-00	METAL CHIP	100K	5%	1/10W
R621	1-216-047-00	METAL CHIP	820	5%	1/10W
R622	1-216-049-00	METAL CHIP	1K	5%	1/10W
R623	1-216-097-00	METAL CHIP	100K	5%	1/10W
R624	1-216-001-00	METAL CHIP	10	5%	1/10W
R625	1-216-094-00	METAL CHIP	75K	5%	1/10W
R626	1-216-107-00	METAL CHIP	270K	5%	1/10W
R627	1-216-097-00	METAL CHIP	100K	5%	1/10W
R628	1-216-052-00	METAL CHIP	1.3K	5%	1/10W
R629	1-216-107-00	METAL CHIP	270K	5%	1/10W
R630	1-216-094-00	METAL CHIP	75K	5%	1/10W
R631	1-216-097-00	METAL CHIP	100K	5%	1/10W
R632	1-216-001-00	METAL CHIP	10	5%	1/10W
R633	1-216-049-00	METAL CHIP	1K	5%	1/10W
R634	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R635	1-216-073-00	METAL CHIP	10K	5%	1/10W
R636	1-216-073-00	METAL CHIP	10K	5%	1/10W
R637	1-216-119-00	METAL CHIP	820K	5%	1/10W
R638	1-216-097-00	METAL CHIP	100K	5%	1/10W
R639	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R640	1-216-079-00	RES, CHIP	18K		
R801	1-216-049-00	METAL CHIP	1K	5%	1/10W
R802	1-216-113-00	METAL CHIP	470K	5%	1/10W
R803	1-216-035-00	METAL CHIP	270	5%	1/10W
R804	1-216-007-00	METAL CHIP	18	5%	1/10W
R805	1-216-113-00	METAL CHIP	470K	5%	1/10W
RV101	1-230-374-11	RES, ADJ, METAL GLAZE 4.7K			
RV201	1-230-374-11	RES, ADJ, METAL GLAZE 4.7K			
RV301	1-230-180-00	RES, VAR, CARBON 10K/10K			
RV601	1-230-182-00	RES, ADJ, METAL GLAZE 100K			
S301	1-554-585-00	SWITCH, SLIDE (M-N)			
S302	1-554-584-00	SWITCH, SLIDE (DOLBY)			
S303	1-554-586-00	SWITCH, LEAF			
T801	1-447-666-00	TRANSFORMER, DC-DC CONVERTER			
TH601	1-806-715-11	THERMISTOR			

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ELECTRICAL PARTS

Ref.No.	Part No.	Description		
C601	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V
C602	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C603	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V
C604	1-135-087-21	TANTAL. CHIP 0.68MF	10%	20V
C605	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V
C606	1-163-810-00	CERAMIC CHIP 0.03MF	10%	25V
C607	1-135-071-21	TANTAL. CHIP 0.15MF	10%	35V
C608	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C609	1-124-413-00	CAP, ELECT 220MF		
C610	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C611	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C612	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C613	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
IC601	8-752-012-32	IC CX20123		
Q601	8-729-102-44	TRANSISTOR 2SB624		
Q602	8-729-102-66	TRANSISTOR 2SC1623		
Q603	8-729-102-66	TRANSISTOR 2SC1623		
Q604	8-729-102-44	TRANSISTOR 2SB624		
Q605	8-729-901-46	TRANSISTOR DTA114YK		
Q606	8-729-102-66	TRANSISTOR 2SC1623		
Q607	8-729-102-66	TRANSISTOR 2SC1623		
Q608	8-729-900-51	TRANSISTOR DTA114TK		
Q609	8-729-102-66	TRANSISTOR 2SC1623		
Q610	8-729-102-66	TRANSISTOR 2SC1623		
Q611	8-729-102-66	TRANSISTOR 2SC1623		
Q612	8-729-102-66	TRANSISTOR 2SC1623		
R601	1-216-049-00	METAL CHIP 1K	5%	1/10W
R602	1-216-097-00	METAL CHIP 100K	5%	1/10W
R603	1-216-073-00	METAL CHIP 10K	5%	1/10W
R604	1-216-073-00	METAL CHIP 10K	5%	1/10W
R605	1-216-085-00	METAL CHIP 33K	5%	1/10W
R606	1-216-083-00	METAL CHIP 27K	5%	1/10W
R607	1-216-089-00	METAL CHIP 47K	5%	1/10W
R608	1-216-097-00	METAL CHIP 100K	5%	1/10W
R609	1-216-049-00	METAL CHIP 1K	5%	1/10W
R610	1-216-001-00	METAL CHIP 10	5%	1/10W
R611	1-216-101-00	METAL CHIP 150K	5%	1/10W
R612	1-216-049-00	METAL CHIP 1K	5%	1/10W
R613	1-216-049-00	METAL CHIP 1K	5%	1/10W
R614	1-216-101-00	METAL CHIP 150K	5%	1/10W
R615	1-216-097-00	METAL CHIP 100K	5%	1/10W
R616	1-216-049-00	METAL CHIP 1K	5%	1/10W
R617	1-216-001-00	METAL CHIP 10	5%	1/10W
R618	1-216-091-00	METAL CHIP 56K	5%	1/10W

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
R619	1-216-077-00	METAL CHIP 15K	5%	1/10W
R620	1-216-105-00	METAL CHIP 220K	5%	1/10W
R621	1-216-105-00	METAL CHIP 220K	5%	1/10W
R622	1-216-118-00	METAL CHIP 750K	5%	1/10W
R623	1-216-097-00	METAL CHIP 100K	5%	1/10W
R624	1-216-097-00	METAL CHIP 100K	5%	1/10W
R625	1-216-097-00	METAL CHIP 100K	5%	1/10W
R626	1-216-065-00	METAL CHIP 4.7K	5%	1/10W
R627	1-216-073-00	METAL CHIP 10K	5%	1/10W
R628	1-216-073-00	METAL CHIP 10K	5%	1/10W
R629	1-216-119-00	METAL CHIP 820K	5%	1/10W
R630	1-216-097-00	METAL CHIP 100K	5%	1/10W
R631	1-216-053-00	METAL CHIP 1.5K	5%	1/10W
R632	1-216-085-00	METAL CHIP 33K	5%	1/10W
RV601	1-230-478-11	RES, ADJ, METAL GLAZE 10K		

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

COILS

- MMH : mH, UH : μH

SEMICONDUCTORS

In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···